

NOV - 5 2008 OCD-ARTESIA

November 5, 2008

NMOCD 1301 West Grand Ave. Artesia, NM 88210

Attn: Gerry Guye

Ref: NOV-30-015-29931-00-0

Dear Mr. Guye:

Enclosed, please find a copy of our closure report for the OXY Pronghorn State No. 2 site restoration project.

Please advise if you've any questions or comments.

Warmest personal regards,

Mike Griffin President Whole Earth Environmental, Inc.

Accepted for record NMOCD

JAN 0 9 2009

2RP-11



## **Executive Summary**

#### Location

The site is located approximately thirteen miles east of the City of Artesia, Eddy County, New Mexico on state lands. The primary land use is grazing of cattle however extensive oil and gas operations are prevalent in the area. The area is semi-arid with a net precipitation / evaporation amount of -73" per year. The legal description is: **S2, T21S, R28E** 

#### **Investigation Activities**

Arcadis Engineering prepared an earthen pit investigation report in February, 2008 using an EM-31 survey tool supplemented by borings and laboratory analysis. The report concluded that the site would best be remediated by folding in the containment berms and adding modest amounts of fertilizer and organics into the surface profile followed by seeding with BLM seed mixture # 2.

#### **Restoration Activities**

Site restoration was accomplished in accordance with the protocol. A composite chloride analysis taken at the conclusion of the project revealed average concentrations of 16 parts per million.

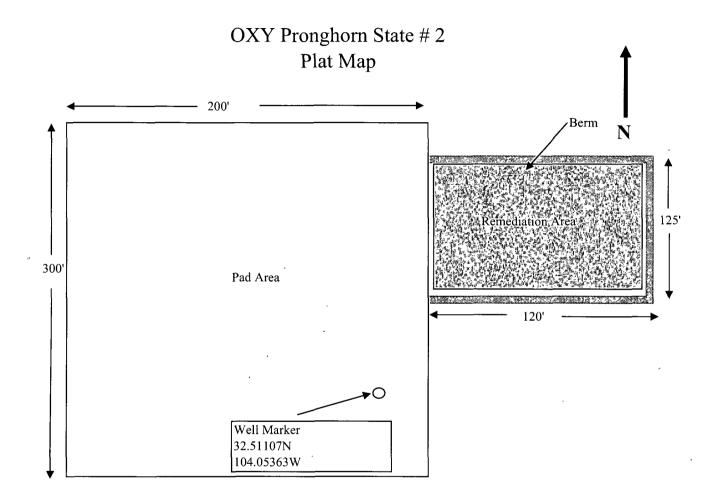


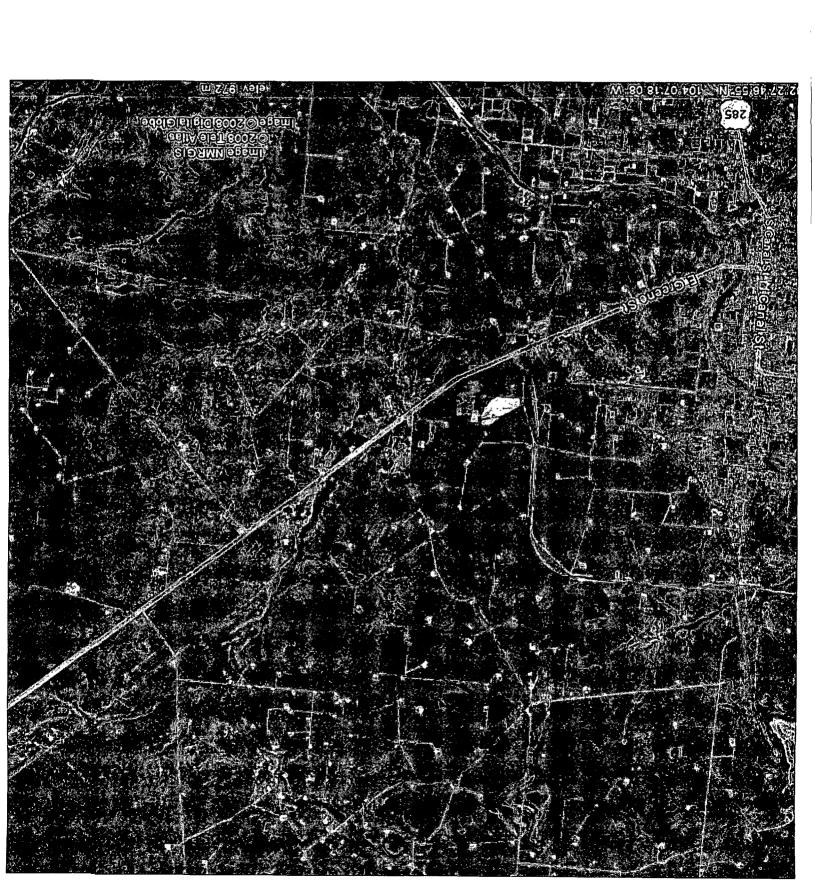
## **Exhibit Index**

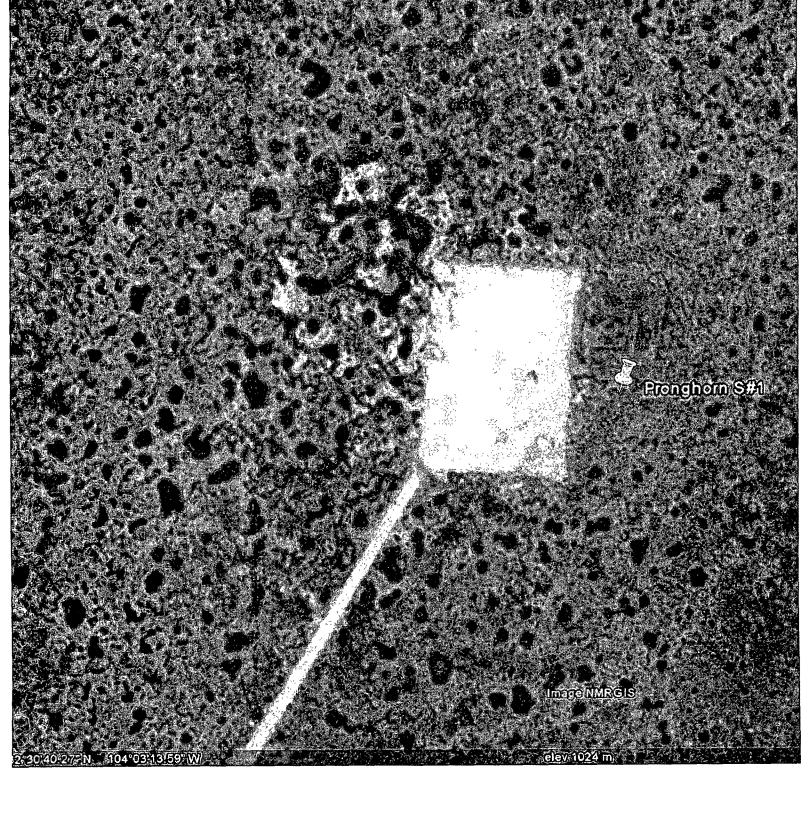
- A. Driving Instructions
- B. Plat Map of Location
- C. Satellite View of Location Zoom out
- D. Satellite View of Location Zoom in
- E. Site Prior to Restoration
- F. Windrow Detail
- G. Seeding Detail

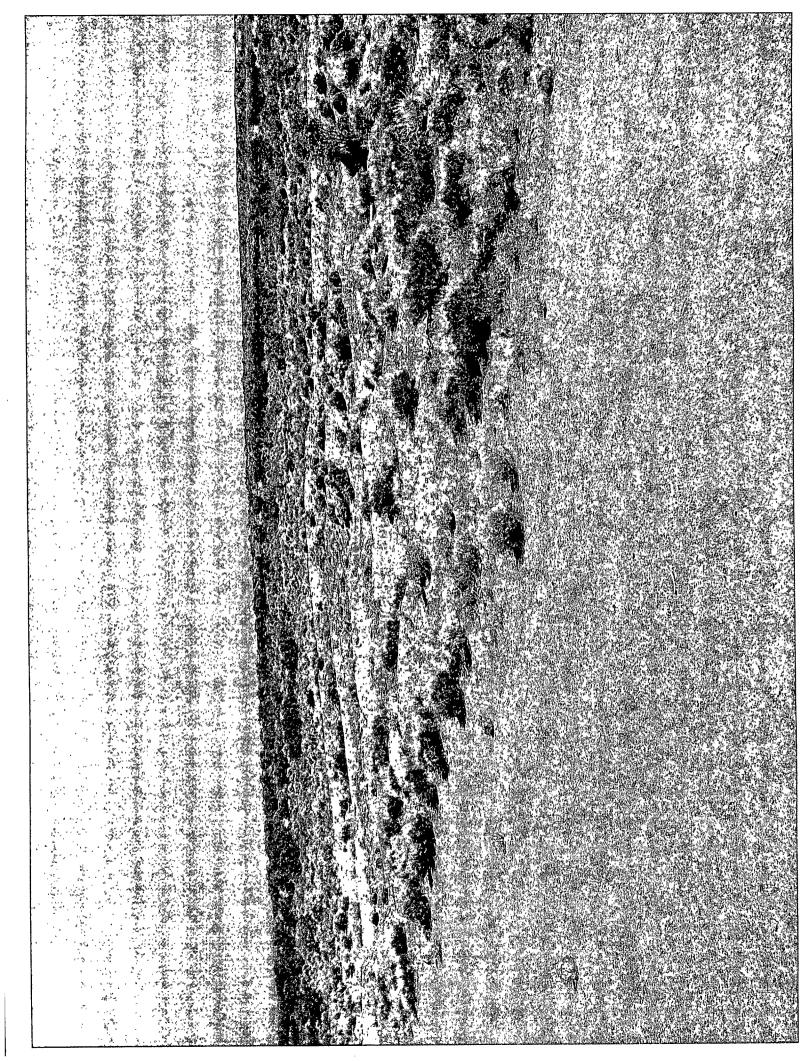
## Driving Instructions To: Pronghorn State #1

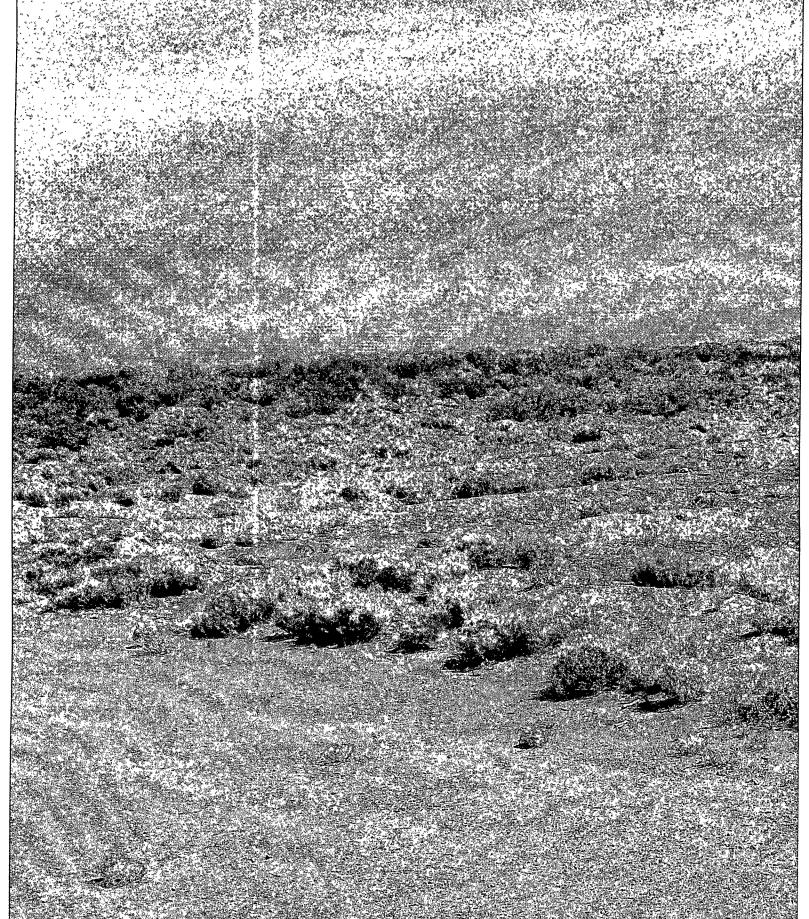
In Carlsbad, NM from the intersection of US 285 N and US 62/180 E, go east on US 62/180 (Hobbs Hwy) approx. 11.5 miles to caliche ranch road with cattle guard and chain gate and take a right. Go 0.3 miles to Judah Oil State 1 Battery and veer left at fork. Go 0.4 miles to road on left. Go down road 0.2 miles to location with caliche pad at end of road.

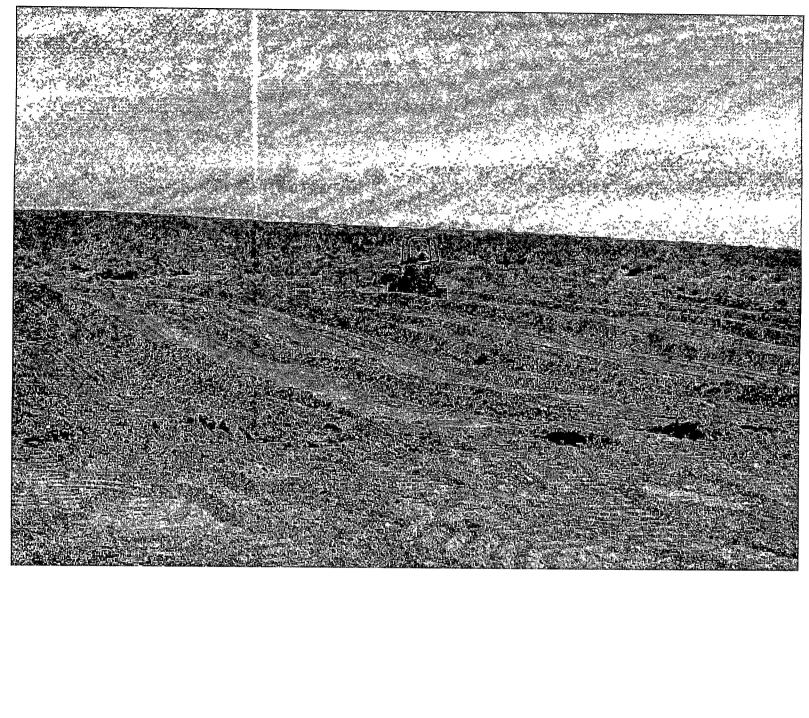
















ANALYTICAL RESULTS FOR WHOLE EARTH ENVIRONMENTAL INC.

ATTN: ROY R. RASCON 2103 ARBOR COVE KATY, TX 77494 FAX TO: (281) 394-2051

Receiving Date: 10/30/08 Reporting Date: 10/31/08

Project Owner: NOT GIVEN
Project Name: OXY PRONG

Project Name: OXY PRONG HORN Project Location: CARLSBAD, NM

Analysis Date: 10/30/08 Sampling Date: 10/29/08

Sample Type: SOIL
Sample Condition: INTACT

Sample Received By: ML

Analyzed By: AB

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H16228-1 DI	STURBED AREA 137X143	16
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		<u> </u>
Quality Control		500
Quality Control		
True Value QC		500
% Recovery		100
Relative Percen	t Difference	< 0.1

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METHOD: Standard Methods	4500-CIB

Note: Analysis performed on a 1:4 w:v aqueous extract.

Chemist

Date

#### H16228 WEE



101 East Marland, Hobbs, NM 88240 (575) 393-2326 Fax (575) 393-2476

Company Name	: Whole Earth	Environ					BIL	LL TO						ANALY
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† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476



Mr Gerry Guye Deputy Field Inspector New Mexico Oil Conservation Division 1301 W Grand Avenue Artesia, New Mexico 88210

FEB 2 1 2008 OCD-ARTESIA ARCADIS US, Inc 5100 East Skelly Drive Suite 1000 Tulsa Oklahoma 74135 Tel 918 664 9900 Fax 918 664 9925 www.arcadis-us com

**Environmental Services** 

Subject

Earthen Pit Investigation Report Pronghorn State #2, Section 2, Township 21 South, Range 28 East, N M P.M, Eddy County, New Mexico

Dear Mr. Guye

ARCADIS has completed the investigation of the earthen pit at the site referenced above I have included two (2) copies of the investigation report for your review. If you have any questions, please call me anytime.

Sincerely,

ARCADIS US., Inc

Michael M Gates Project Advisor

Copies

NGX Company, c/o Charles K Purcell GB Petroleum Services, c/o Paul Halajian OXY USA, c/o Andrew Cloutier

February 20, 2008

Contact

Michael M Gates

Phone

918-664-9900

Mike.Gates@arcadis-

us.com

# **Earthen Pit Investigation**

Pronghorn State No. 2 Eddy County, New Mexico

February 2008

### PREPARED FOR

NGX Company v. G.B. Petroleum Services, LLC, et.al.: USDC Case No. CV-07-268 BB/WDS



## EARTHEN PIT INVESTIGATION PRONGHORN STATE No. 2 EDDY COUNTY, NEW MEXICO

Prepared by ARCADIS, Inc.

February 2008

Michael M. Gates, P.G. Project Manager

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- 2. Path Traveled for EM 31 Horizontal and Vertical Dipole
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- 1. Historical Pronghorn State No. 2 Well Pad Topo
- 2. Site Investigation Photographs
- 3. Field Notes/Soil Boring Logs
- 4. Laboratory Analytical Reports

#### 1.0 INTRODUCTION

#### 1.1 PURPOSE AND SCOPE

ARCADIS prepared a scope of work to investigate the soil quality within and underlying an earthen pit associated with the Pronghorn State #2 site located in Section 2, Township 21 South, Range 28 East, N.M.P.M., Eddy County, New Mexico (Figure 1). An historical well pad topographic survey of the Pronghorn State #2 site is provided in Attachment 1. A work plan for an investigation of the pit was submitted on November 1, 2007 to the New Mexico Oil Conservation Division (OCD) for approval prior to implementation. The scope of work provided in the work plan is consistent with the discussions held between the interested parties at a meeting conducted at the site on August 23, 2007. On November 2, 2007 ARCADIS received approval from OCD to implement the scope of work.

The pit remains open but was never used during well construction because a well was not completed at this location. Photographs taken at the site during the investigation are provided in Attachment 2. The objective of the investigation was to sample soils within and underlying the pit to determine the presence or absence of impacts from brine and/or petroleum hydrocarbons that may have been discharged into the pit. Based on the results of the investigation recommendations are provided regarding the necessity of remediation and/or additional investigation activities associated with closure of the pit.

The scope of work to investigate soil quality within and underlying the earthen pit focused on the upper twenty (20) feet of the soil profile. Groundwater was not encountered within this interval. Two primary investigative tools were utilized for the investigation. Electromagnetic conductivity surveys were first conducted to provide information on the vertical and lateral extent, if any, of brine related impacts. This was immediately followed by confirmation soil sampling to determine the presence or absence of impacts from brine or petroleum hydrocarbons.

Two EM-31 electromagnetic conductivity surveys were conducted over a grid area covering approximately 200 feet by 130 feet and overlying and extending beyond the boundaries of the earthen pit. The objectives of these surveys were to determine background conductivity response and identify any conductivity anomalies within the surveyed area to target for confirmation soil sampling. The EM-31 was operated in two modes to target two vertical depth intervals; one to investigate the depth interval between ground surface and approximately nine feet and the other to investigate the depth interval between ground surface and approximately 19 feet.

Soil borings were conducted using direct-push technology and were located based on the EM-31 survey results. Soil borings were advanced to approximately 20 feet in depth at two locations; one in the center of the anomalous high conductivity area and one in the area of lowest conductivity outside of the pit boundaries. In addition, eight (8) shallow soil borings

were advanced to a depth of approximately five (5) feet within the surveyed area to confirm the results obtained from the EM survey.

Discrete soil samples were collected from each shallow soil boring at one (1) foot intervals. For the two deeper borings soil samples were collected at one foot intervals to six feet and then were collected by compositing samples from each two-foot interval to the total boring depth. Collected soil samples were submitted to an analytical laboratory for analysis of salinity and petroleum hydrocarbon parameters.

The results of the field investigation work are presented in this report to the OCD. The report includes conclusions and recommendations for closure of the pit.

#### 2.0 FIELD METHODOLOGIES

ARCADIS conducted the field investigation of the pit from December 4 through December 7, 2007. Descriptions of the field methodologies utilized during the investigation are provided in the following.

#### 2.1 ELECTROMAGNETIC CONDUCTIVITY SURVEYS

Electromagnetic (EM) conductivity surveys of the area encompassing the earthen pit were utilized to delineate areas potentially impacted by oil field brine. The particularly high electrical conductivity of oilfield production water (brine) makes the detection of brine related soil impacts by EM conductivity methods an especially reliable geophysical application. Electromagnetic conductivity instruments consist of a transmitter and receiver coil, and a power source that can be handled by one or two persons. During the operation of the instrument, the transmitter coil is energized by an alternating current and radiates an electromagnetic field into the earth. This primary field induces electrical currents (called eddy currents) in the earth below the instrument. The magnitude of these currents is proportional to the conductivity of the ground. These eddy currents, in turn, generate a secondary electromagnetic field that is detected by the receiver coil on the instrument. The receiver coil also detects the primary field and uses these two measurements to calculate the conductivity of the ground. This reading represents a bulk measurement of the conductivity of a volume of ground beneath the instrument down to its effective depth of penetration.

For this investigation, an EM-31 survey was conducted in both the horizontal and vertical dipole modes of orientation. The average depth of investigation in the vertical dipole mode is approximately 19 feet. In the horizontal dipole mode the average depth of investigation is about 9 feet. The effective depth difference allows for some vertical discrimination of conductivity within the soil profile throughout the surveyed area.

A survey grid of approximately 200 feet by 130 feet was utilized to overlap and extend beyond the boundaries of the earthen pit to allow a comparison of background soil conditions with those underlying the pit. The survey was completed by walking the area in a north-south orientation along survey lines that were about 5 feet apart. The survey grid for the EM-31 surveys is provided as Figure 2. Conductivity readings were recorded continuously as each survey line was traversed into an integrated DL600 data logger at a rate of 5 hertz (Hz; 5 data points per second) while global positioning system (GPS) coordinates were recorded at 1 Hz. Real time graphical presentation of the data was observed via computer.

#### 2.2 SOIL BORINGS AND SOIL SAMPLING

Ten (10) soil borings were conducted for this investigation; two deep borings (20 feet) and eight shallow borings (5 feet). A comparison of the collected data allows for estimating the amount of produced water discharged to the pit and the potential threat to any underlying groundwater. The soil boring data is also used to confirm the results of the EM survey.

The borings were installed using direct-push technology and continuous soil cores were collected as the borings are advanced. A truck-mounted direct push rig operated by Harrison & Cooper, Inc from Lubbock, Texas was used to complete the soil borings. The two deeper borings were installed in the area of highest conductivity and a background location, respectively, based on the EM-31 survey. For these borings, soil samples were collected at one (1) foot intervals for the first six feet and then composited for each two foot interval throughout the depth of the boring. Each soil sample was analyzed for salinity parameters as described in Section 2.3. Two soil samples (collected from 0-5 feet and 5-10 feet) from each of the deeper borings were also analyzed for Total Petroleum Hydrocarbon (TPH) using Texas Method 1005. TPH analyses for additional samples were not indicated to be warranted based on visual and olfactory screening conducted at the time of sampling. The deep boring locations are shown on Figure 3 and the boring logs are provided in Attachment 3.

Eight (8) shallow soil borings were advanced to a depth of approximately five (5) feet within the surveyed area to confirm the results obtained from the EM-31 survey. For these borings, soil samples were collected at one (1) foot intervals throughout the depth of the boring. Each soil sample was analyzed for salinity parameters as described in Section 2.3. For the two borings located in the area of highest conductivity (SB1 and SB8), based on the EM-31 survey, two soil samples per boring were collected and analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), and TPH. The shallow boring locations are shown on Figure 4 and the boring logs are provided in Attachment 3.

#### 2.3 INORGANIC ANALYSES

Soil samples for inorganic parameter analysis were delivered under chain of custody to the Texas A&M University Soil, Water and Forage Testing Laboratory, Department of Soil and Crop Sciences, College Station, Texas. A request for analysis form was prepared for each sample choosing routine analysis for fertility parameters and detailed salinity.

The routine analysis includes pH, electrical conductivity (EC), nitrate-nitrogen (NO3-N), phosphorus (P), potassium (K), magnesium (Mg), calcium (Ca), sodium (Na) and sulfur (S). Soil pH and EC were determined in a 1:2 soil:water extract using Methods 10-3.2 and 10-3.3. Phosphorus, K, Ca, Mg, Na and S were extracted using the Mehlich III buffer

<sup>&</sup>lt;sup>1</sup> Rhoades, J.D. 1982. Soluble salts. p. 171-173. *In A.L. Page*, et al. (ed.). Methods of Soil Analysis: Part 2. Agron. Monogr. 9. 2<sup>nd</sup> ed. ASA, Madison, WI.

solution<sup>2</sup>, and analyzed by inductively coupled plasma (ICP)-atomic emission spectrometry described in Method 3-4.<sup>3</sup> Plant available nitrogen (NO3-N) was extracted using a 1 N KCl solution and measured by the cadmium reduction to nitrite followed by colorimetric spectrometry described in Method 33-9.<sup>4</sup>

Detailed salinity parameters include pH, EC, Na, K, Ca and Mg determined in a saturated paste soil:water extract prepared with deionized water. A saturated paste is a moisture equivalent produced where all the voids between soil particles are filled with water and the surface of the soil glistens as it reflects light as described in Method 10-2.3. The pH and EC is measured directly in the paste using a pH electrode and conductivity probe. The water is then extracted under vacuum and analyzed by ICP to determine levels of Na, K, Ca and Mg.

#### 2.4 ORGANIC (PETROLEUM HYDROCARBON) ANALYSES

Soil samples for petroleum hydrocarbon parameter analysis were delivered under chain of custody to TraceAnalysis, Inc, Lubbock, Texas. Selected soil samples were analyzed for TPH using Texas Method 1005. Two specific carbon ranges were evaluated: C6-C12 and >C12-C35. The C6-C12 range represents the gasoline range fraction. The >C12-C35 range represents the diesel range fraction and above. Selected soil samples were also analyzed for BTEX using Method S8021B.

Two samples from each of the deeper soil borings (DSB1 and DSB2) were submitted for TPH analysis. The soil samples from each of these borings were collected from the 0 to 5 foot interval and the 5 to 10 foot interval. Two samples were collected from the shallow soil borings that corresponded to the area of highest conductivity based on the EM-31 results (SSB1 and SSB8). The soil samples from each of these borings were collected from the 0 to 2.5 foot interval and the 2.5 to 5 foot interval. These samples were analyzed for BTEX and TPH.

Plant Anal. 15(12): 1409-1416.

<sup>&</sup>lt;sup>2</sup> Mehlich, A. 1984. Mehlich-3 soil test extractant: a modification of Mehlich-2 extractant. Commun. Soil Sci.

<sup>&</sup>lt;sup>3</sup>Soltanpour, P.N., J.B. Jones, Jr. and S.M. Workman. 1982. Optical Emission Spectrometry. p. 38-53. *In* A.L. Page, et al. (ed.). Methods of Soil Analysis: Part 2. Agron. Monogr. 9. 2<sup>nd</sup> ed. ASA, Madison, WI. <sup>4</sup>Keeney, D.R. and D.W. Nelson. 1982. Nitrogen-Inorganic Forms. p. 682-686. *In* A.L. Page, et al. (ed.). Methods of Soil Analysis: Part 2. Agron. Monogr. 9. 2<sup>nd</sup> ed. ASA, Madison, WI.

#### 3.0 INVESTIGATION RESULTS

ARCADIS conducted the field investigation of the pit from December 4 through December 7, 2007. The EM-31 survey was conducted first. The configuration of the soil boring locations was determined based on the results of the EM-31 survey. The results of the investigation are provided in the following.

#### **3.1 EM-31 RESULTS**

An EM-31 survey was conducted in both the horizontal and vertical dipole modes of orientation. The average depth of investigation in the vertical dipole mode is approximately 19 feet. In the horizontal dipole mode the average depth of investigation is about 9 feet. The effective depth difference allows for some vertical discrimination of conductivity within the soil profile throughout the surveyed area.

The results of the vertical dipole survey are provided on Figure 3. The conductivities are presented in millisiemens per meter (mS/m) and the values represent conductivities that are averaged over the entire effective depth (0 to 19 feet for the vertical dipole mode). As shown on Figure 3, the conductivities ranged from a background reading of near zero (and slightly negative) to a maximum reading approaching 80 mS/m within the pit area where the anomalous conductivity signature is obviously elevated above background.

The horizontal dipole survey results are shown on Figure 4. These conductivities are representative of the average conductivities within the depth interval of approximately 0 to 9 feet. As shown on Figure 4, the conductivities ranged from a background reading of near zero (and slightly negative) to a maximum reading approaching 32 mS/m within the pit area. As with the deeper survey, the anomalous conductivity signature is elevated above background within the pit area.

The conductivity anomalies are indicative of the presence of salts that are likely associated with a discharge of oil field brine. The shallow survey demonstrates a somewhat larger area of elevated conductivity than the deeper survey, but the deeper survey exhibits higher conductivities. While the EM-31 results are indicative of a the presence of oil field brine impacts, the overall amount of brine present appears to be limited based on the conductivity readings and confirmed by the salinity analysis discussed in the following section.

#### 3.2 SOIL QUALITY RESULTS (INORGANICS)

Inorganic salinity parameters determined on a saturated paste basis are summarized in Table 1 for the shallow soil borings SSB1 through SSB8 and in Table 2 for deep soil borings DSB1 and DSB2. Soil pH tended to be slightly alkaline (pH 7.4 to pH 7.8) to moderately alkaline (pH 7.9 to pH 8.4) indicative of a calcium carbonate buffered system. Soil pH

readings of 8.5 and 8.6 measured in the deep background core (DSB2, Table 2) in soil layers from 5-14 ft reflect a strongly alkaline reaction suggesting a contribution from sodium bicarbonate to the buffer. The soil profile in shallow boring SSB1 from 0 to 5 ft was neutral in reaction ranging from pH 6.9 to pH 7.6.

Soil EC is a measurement of total soluble salts and reflects the distribution of both cations and anions in profile when determined for discreet sample intervals as a function of depth. Due to the requirement of electrical neutrality in water samples and in soil water extracts there is a balance between positively charged cations (+) and negatively charged anions (-) and the sum of either of these entities is equal to the EC in mmhos/cm x 10.<sup>5</sup> The relationship is as follows:

```
\Sigma of the cations, meq/liter = \Sigma of the anions, meq/liter

EC mmhos/cm x 10 = \Sigma cations (Na, K, Ca, Mg), meq/liter

EC mmhos/cm x 10 = \Sigma anions (Cl, NO<sub>3</sub>, HCO<sub>3</sub>, CO<sub>3</sub>, SO<sub>4</sub>), meq/liter
```

Cations and anions are typically measured and reported in ppm (mg/liter). To convert a cation or anion constituent to meq/liter one simply has to divide the ppm value by the given elements milliequivalent (meq) weight in mg/meq. The mg/meq constants for sodium, potassium, calcium and magnesium are 23, 39, 20 and 12.2, respectively. As an example the sum of cations and comparison to EC for SSB1, 2-3 ft is a follows:

```
Na, 2039 mg/liter ÷ 23 mg/meq = 88.7 meq/liter K, 49 mg/liter ÷ 39 mg/meq = 1.3 meq/liter Ca, 1346 mg/liter ÷ 20 mg/meq = 67.3 meq/liter Mg, 86 mg/liter ÷ 12.2 mg/meq = 7.1 meq/liter Total cation = 164.4 meq/liter EC mmhos/cm = 164.4 meq/liter/10 EC (estimated) = 16.4 mmhos/cm
```

The actual EC was measured at 17.0 mmhos/cm compared to the calculated value of 16.4 mmhos/cm demonstrating that the cations normally found in soils conserve the charge measured as conductivity. The close agreement between the measured and the calculated EC values also point to the accuracy of the data.

Based on these relationships it is evident from the data that the EC values in Table 1 and Table 2 are predominantly the result of soluble sodium and calcium. Furthermore it was demonstrated that the salt level associated with these cations is orders of magnitude higher in the pit as compared to the background soil boring DSB2. Sodium is a reflection of brine water put into the pit. Soluble calcium is produced by reaction of brine with solid phase calcium in preparation of the soil:water extract. Fertility parameter analyses summarized in Tables 3 and 4 show high levels of extractable calcium in the deeper sample intervals (3-4 ft and 4-5 ft) of the shallow borings and extending throughout the profile in the deep soil

<sup>&</sup>lt;sup>5</sup> Rhoades, J.D. 1982. Soluble salts. p. 173. *In* A.L. Page, et al. (ed.). Methods of Soil Analysis: Part 2 Agron. Monogr. 9. 2<sup>nd</sup> ed. ASA, Madison, WI.

borings constructed inside the pit (DSB1) and in the background soil boring (DSB2). Approximately 61% of the extractable sodium in the shallow borings is water soluble with the difference attributed to exchangeable sodium desorbed by the extraction process. The number increases to about 66% of the extractable sodium being water soluble in the deep borings. There is no discernible relationship between water soluble calcium and extractable calcium.

There was no indication of calcium redistribution (movement by leaching), based on the analytical data from the deep soil boring constructed inside the pit. However, the data does show sodium was distributed throughout the profile with some redistribution out of the surface layers to deeper strata. Total sodium salt at DSB1 corresponding to an EM-31 reading of 28 was calculated to be 114,070 lb/acre-20 ft compared to background EM-31 reading of -2 and sodium level of 1,646 lb/acre-20 ft. Using these two benchmarks and assuming a linear response it was determined that an EM-31 reading of 20 (measured at SSB1) corresponds to a sodium level of 84,000 lb/acre-20 ft.

The analytical laboratory reports are included as Attachment 4.

#### 3.3 SOIL QUALITY RESULTS (HYDROCARBONS)

Based on visual inspection, staining of surface soils was observed in a small area of the northern portion of the pit. Dark staining was noted in shallow boring SSB-1 in this same area. A lesser degree of staining was also noted at boring SSB-2. Staining was not observed in any other boring or area of the pit.

TPH and BTEX were analyzed in samples collected from SSB1 and SSB8, the two shallow borings exhibiting the highest conductivity readings from the EM-31 survey. The results are summarized in Table 5. For the BTEX analysis, only a small amount of xylenes were identified ranging from 0.0311 mg/kg to 0.0494 mg/kg. No other BTEX parameter was detected. TPH in the carbon range C6 -C12 was only identified in one shallow soil sample (SSB1; 0-2.5 ft) at a concentration of 70.4 mg/kg. TPH in the carbon range >C12-C35 was identified in SSB1 at 0-2.5 ft at a concentration of 2,240 mg/kg. The TPH concentration decreased to 614 mg/kg in the 2.5 to 5 ft interval from this boring. The only other sample to exhibit a TPH concentration was from SSB8 at 0 to 2.5 ft which had a concentration of 102 mg/kg of TPH in the carbon range >C12-C35.

TPH was not detected in the deeper soil boring samples. The analytical laboratory reports are included as Attachment 4.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Total sodium salt in the pit was calculated based on the areal extent of EM-31 contours and corresponding total sodium in a 20 ft profile. Due to the tight grouping of EM contours, values were calculated at the high EM reading and by extrapolating this response over an area represented by 4 contour intervals. Although, the mass of sodium is large in terms of lb/acre-20 ft at corresponding high EM readings, the acreage represented by a grouping of 4 contour intervals is small, resulting in the total soluble sodium mass added to the pit at 821 lb. If a sodium chloride model (1:1 Na:Cl molar ratio) is assumed, the corresponding chloride is 1,268 lb. An equivalent mass of salt is recovered in 0.49 acre of native soil to a depth of 20-ft.

Limited staining of surface soils was observed in a small area of the northern portion of the pit. Dark staining was noted in shallow boring SSB-1 in this same area. A lesser degree of staining was also noted at boring SSB-2. Staining was not observed in any other boring or area of the pit. Based on analytical results of BTEX and TPH, and visual/olfactory observations, the impacts to soils within the pit from discharges of petroleum hydrocarbons appears minor and can be addressed in-situ in conjunction with pit restoration and closure activities discussed below.

Based on the quantity of salt recovered in the pit and distribution below a depth of about 3-ft it is recommended that the salt be left undisturbed and the pit backfilled with berm material and additional soil as necessary to establish the normal grade and contour. This would establish near salt free profile of 6 to 7 ft. In addition, it is proposed to add 1,000 lb of organic matter to the restored surface that will be blended to a depth of inches, followed by a surface application of 5-lb actual nitrogen and 3-lb phosphorus as P2O5. The final work element is to seed the disturbed area with a native grass mixture approved by the BLM and mulch cover of 250 lb coarse straw, crimped to hold. These restoration procedures should be adequate to achieve closure of this site.

Table 1. Inorganic Salinity Parameters Analysis Summary Pronghorn #2 Pit, Shallow Soil Borings Eddy County, New Mexico

	Salinity Parameter											
Sample ID	рН	EC <sup>(1)</sup>	Na <sup>(2)</sup>	K <sup>(2)</sup>	Ca <sup>(2)</sup>	Mg <sup>(2)</sup>	SAR	ESP				
SB1, 0-1ft	69	1.33	73	13	205	9	1.35	2.0				
SB1, 1-2ft	7.1	1.9	146	14	224	9	2.61	3.9				
SB1, 2-3ft	69	17.02	· 2039	49	1346	86	14.6	21.7				
SB1, 3-4ft	7.6	0.77	89	21	62	7	2.86	4.3				
SB1, 4-5ft	7 2	30	5689	128	1629	181	35.7	53.2				
SB2, 0-1ft	7 6	1.33	132	13	108	5	3.39	5 1				
SB2, 1-2ft	7.9	4.76	447	49	1004	41	3.76	5 6				
SB2, 2-3ft	7.4	3 38	295	24	720	21	2.96	4.4				
SB2, 3-4ft	7.5	12.76	1394	36	913	47	12.21	18 2				
SB2, 4-5ft	7 6	0.46	49	8	46	3	1 88	28				
SB3, 0-1ft	8.3	0 42	52	15	329	13	0 77	1.1				
SB3, 1-2ft	8 5	0.4	53	22	156	17	1 06	1.6				
SB3, 2-3ft	8.4	1.22	160	7	48	2	6.13	9.1				
SB3, 3-4ft_	8.4	3.89	462	8	92	5	12.74	19 0				
SB3, 4-5ft	8.3	4.32	556	11	92	5	15.25	22.7				
SB4, 0-1ft	7.8	0.63	48	46	52	3	1 75	2.6				
SB4, 1-2ft	8.2	0.56	78	20	185	12	1 5	2.2				
SB4, 2-3ft	8.3	0.66	102	207	189	106	1 47	2.2				
SB4, 3-4ft	8.5	1.47	228	19	72	10	6.7	10.0				
SB4, 4-5ft_	8	19.02	1812	28	37	125	32	47.7				
SB5, 0-1ft	8.6	0.5	63	19	254	15	1 04	1.5				
SB5, 1-2ft_	8 2	1 44	204	6	47	3	7.73	11 5				
SB5, 2-3ft	8.5	3.35	539	6	55	4	18.97	28 3				
SB5, 3-4ft	8.2	6 87	1369	13	138	8	30.61	45 6				
SB5, 4-5ft	7.7	12 6	1428	21	734	40	13.92	20.7				
SB6, 0-1ft	8 2	0.5	55	8	45	3	2.18	3.2				
SB6, 1-2ft	8.5	0.42	58	- 80	134	51	1.09	1 6				
SB6, 2-3ft	7.9	4.21	493	11	157	9	10.37	15.4				
SB6, 3-4ft	7.9	13.32	1525	21	854	43	13.82	20.6				
SB6, 4-5ft	8	14	1544	29	1027	59	12 7	18 9				
SB7, 0-1ft	8 1	0.54	38	9	69	2	1.23	1 8				
SB7, 1-2ft	8	1.65	193	14	106	5	4.99	7 4				
SB7, 2-3ft	8.2	1.7	265	16	74	6	7.95	11.8				
SB7, 3-4ft	8.4	2.14	359	70	224	37	5.86	8.7				
SB7, 4-5ft_	8.3	16	244	29	298	15	3.74	5.6				
SB8, 0-1ft	8.1	24	304	13	197	8	5.78	8.6				
SB8, 1-2ft	8.3	2.19	325	14	134	8	7.38	11.0				
SB8, 2-3ft	8	2.78	457	23	202	11	8 49	12.6				
SB8, 3-4ft	8	8.18	953	17	226	15	16 6	24.7				
SB8, 4-5ft	8	10.2	1211	22	537	22	13.93	20.8				

<sup>1.</sup> mmhos/cm

<sup>2.</sup> Parts per million (ppm)

Table 2. Inorganic Salinity Parameters Analysis Summary Pronghorn #2 Pit, Deep Soil Borings Eddy County, New Mexico

	Salinity Parameter										
Sample ID	рΗ	EC <sup>(1)</sup>	Na <sup>(2)</sup>	K <sup>(2)</sup>	Ca <sup>(2)</sup>	Mg <sup>(2)</sup>	SAR	ESP			
DSB1, 0-1ft	8	0.67	41	30	83	5	1.19	1.8			
DSB1, 1-2ft	8.2	0.9	104	9	207	5	1.95	2.9			
DSB1, 2-3ft	8	3.47	379	15	524	14	4.46	66			
DSB1, 3-4ft	79	17.9	2117	37	1136	67	16.53	24 6			
DSB1, 4-5ft	7.7	18.48	2104	42	1192	78	15.96	23.8			
DSB1, 5-6ft	7.8	29.2	3507	57	2300	149	19.1	28.5			
DSB1, 6-8ft	7.8	21.1	2627	37	1072	84	20.8	31.0			
DSB1, 8-10ft	8	12.27	1521	28	638	37	15.85	23.6			
DSB1,10-12ft	8.3	12.76	1426	32	404	39	18.16	27 1			
DSB1,12-14ft	8	15.14	1844	33	759	47	17.56	26.2			
DSB1,14-16ft	8 1	12.5	1567	25	375	34	20.78	31.0			
DSB1,16-18ft	8	13.71	1853	30	676	39	<sup>-</sup> 18.77	28.0			
DSB1,18-20ft	7.9	13.97	1655	24	848	61	14.8	22.0			
DSB2, 0-1ft	7.9	0.32	23	8	54	3	0.82	1.2			
DSB2, 1-2ft	8	0.34	21	5	67	5	0.68	1.0			
DSB2, 2-3ft	8.3	0.25	24	3	34	2	1.1	1.6			
DSB2, 3-4ft	8.4	0.26	19	4	50	2	0.72	1 1			
DSB2, 4-5ft	8.3	0.33	34	3	37	2	1 48	2.2			
DSB2, 5-6ft	8.6	0.28	25	3	31	3	1 14	1.7			
DSB2, 6-8ft	86	0.22	25	3	17	2	1.57	2.3			
DSB2, 8-10ft	8.5	0.34	42	3	14	2	2 83	4.2			
DSB2,10-12ft	8.6	0.3	37	3	8	1	3 26	4.9			
DSB2,12-14ft	8 5	0.38	45	3	17	1	2.81	4 2			
DSB2,14-16ft	8 3	0.8	86	4	47	3	3.29	4.9			
DSB2,16-18ft	8.4	0.44	49	4	27	2	2.47	3.7			
DSB2,18-20ft	8.4	0.74	71	6	48	3	2.67	4.0			

<sup>1.</sup> mmhos/cm

<sup>2.</sup> Parts per million (ppm)

Table 3 Soil Fertility Analysis Summary Pronghorn #2 Pit, Shallow Soil Borings Eddy County, New Mexico

	Soil Fertility Parameter										
Sample ID	NO <sub>3</sub> -N	Р	K	Extr Ca	Extr Mg	Sulfur	Extr Na				
SB1, 0-1ft	3	6	161	4226	86	68	210				
SB1, 1-2ft	0	3	126	3840	63	55	322				
SB1, 2-3ft	2	8	207	3702	149	94	1790				
SB1, 3-4ft	4	3	193	4506	186	47	2920				
SB1, 4-5ft	9	0	112	30178	390	136	6677				
SB2, 0-1ft	2	6	328	4743	135	42	296				
SB2, 1-2ft	3	6	186	3382	101	49	388				
SB2, 2-3ft	3	1	16	591	9	4	36				
SB2, 3-4ft	8	13	151	2508	72	962	452				
SB2, 4-5ft	60	3	161	24179	196	195	2269				
SB3, 0-1ft	1	3	128	3493	100	17	236				
SB3, 1-2ft	3	3	162	5725	118	20	305				
SB3, 2-3ft	14	2	121	17196	142	65	558				
SB3, 3-4ft	46	0	86	29086	192	134	1216				
SB3, 4-5ft	65	1	237	24982	229	156	1884				
SB4, 0-1ft	8	5	636	3879	158	16	177				
SB4, 1-2ft	7	3	263	2802	84	10	194				
SB4, 2-3ft	3	1	59	1778	31	3	188				
SB4, 3-4ft	5	4	166	3973	97	54	881				
SB4, 4-5ft	13	0	42	29459	259	126	2574				
SB5, 0-1ft	3	4	113	2677	85	13	235				
SB5, 1-2ft	3	3	133	3859	112	25	619				
SB5, 2-3ft	3	0	62	28397	185	79	996				
SB5, 3-4ft	10	0	112	29939	196	84	1785				
SB5, 4-5ft	11	0	64	30490	210	90	2231				
SB6, 0-1ft	6	5	106	3921	81	15	211				
SB6, 1-2ft	3	5	132	3847	93	17	284				
SB6, 2-3ft	6	3	65	15740	86	61	514				
SB6, 3-4ft	28	0	76	30148	211	200	2232				
SB6, 4-5ft	11	0	91	29996	256	147	2900				
SB7, 0-1ft	5	5	145	4091	71	20	157				
SB7, 1-2ft	3	9	179	3623	88	64	442				
SB7, 2-3ft	6	8	181	1793	96	59	657				
SB7, 3-4ft	6	5	133	1639	81	42	719				
SB7, 4-5ft	7	7	139	2707	77	41	622				
SB8, 0-1ft	4	4	127	3300	72	136	542				
SB8, 1-2ft	5	6	150	3128	90	41	699				
SB8, 2-3ft	5	7	154	1585	81	76	856				
SB8, 3-4ft	28	0	104	29209	205	150	1873				
SB8, 4-5ft	29	0	69	30675	199	160	1759				

<sup>1</sup> All parameters in parts per million (ppm)

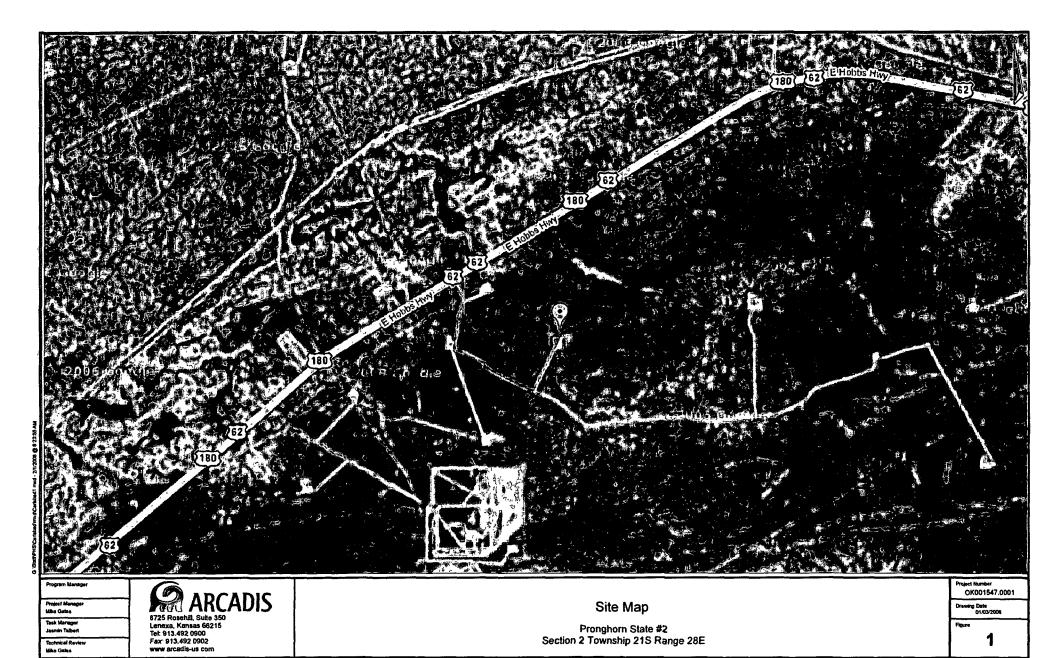
Table 4. Soil Fertility Analysis Summary Pronghorn #2 Pit, Deep Soil Borings Eddy County, New Mexico

	Soil Fertility Parameter									
Sample ID	NO <sub>3</sub> -N	Р	K	Extr Ca	Extr Mg	Sulfur	Extr Na			
DSB1, 0-1ft	11	5	269	4270	128	21	170			
DSB1, 1-2ft	5	4	137	4084	100	22	368			
DSB1, 2-3ft	3	1	98	11977	108	297	710			
DSB1, 3-4ft	38	1	110	30095	247	215	3249			
DSB1, 4-5ft	22	1	99	30128	288	187	3231			
DSB1, 5-6ft	16	0	74	30793	307	156	4210			
DSB1, 6-8ft	3	1	79	29743	283	133	4007			
DSB1, 8-10ft	6	1	80	25962	197	113	2249			
DSB1,10-12ft	3	1	77	15735	138	35	2660			
DSB1,12-14ft	7	0	78	27534	214	91	2981			
DSB1,14-16ft	3	1	74	7475	115	25	2812			
DSB1,16-18ft	5	0	89	18600	187	84	2927			
DSB1,18-20ft	6	1	67	7829	150	26	2732			
DSB2, 0-1ft	3	3	192	1691	145	8	137			
DSB2, 1-2ft	3	2	202	6187	337	17	133			
DSB2, 2-3ft	3	1	40	30135	197	48	200			
DSB2, 3-4ft	3	0	25	29882	192	55	209			
DSB2, 4-5ft	4	0	37	31149	240	58	170			
DSB2, 5-6ft	2	0	49	30424	349	63	194			
DSB2, 6-8ft	2	0	60	13123	256	20	149			
DSB2, 8-10ft	3	0	102	17742	383	44	281			
DSB2,10-12ft	2	0	48	18473	178	23	179			
DSB2,12-14ft	3	2	45	6542	118	12	187			
DSB2,14-16ft_	3	2	32	12527	94	32	205			
DSB2,16-18ft	3	0	63	11357	162	27	186			
DSB2,18-20ft	1	1	34	5646	68	17	180			

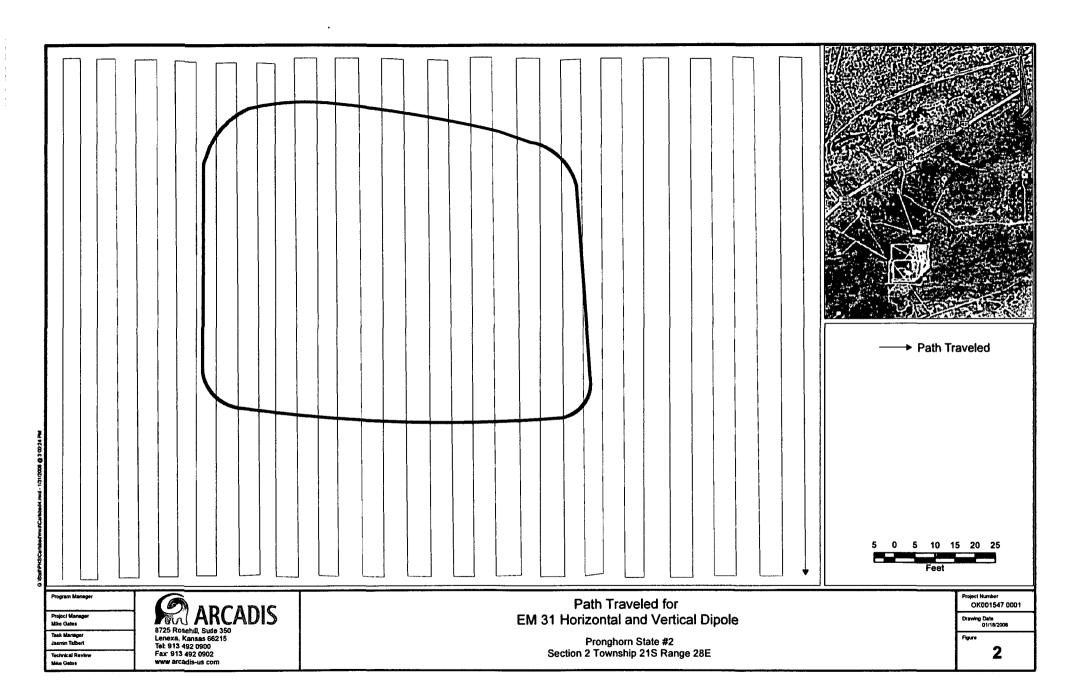
<sup>1.</sup> All parameters in parts per million (ppm)

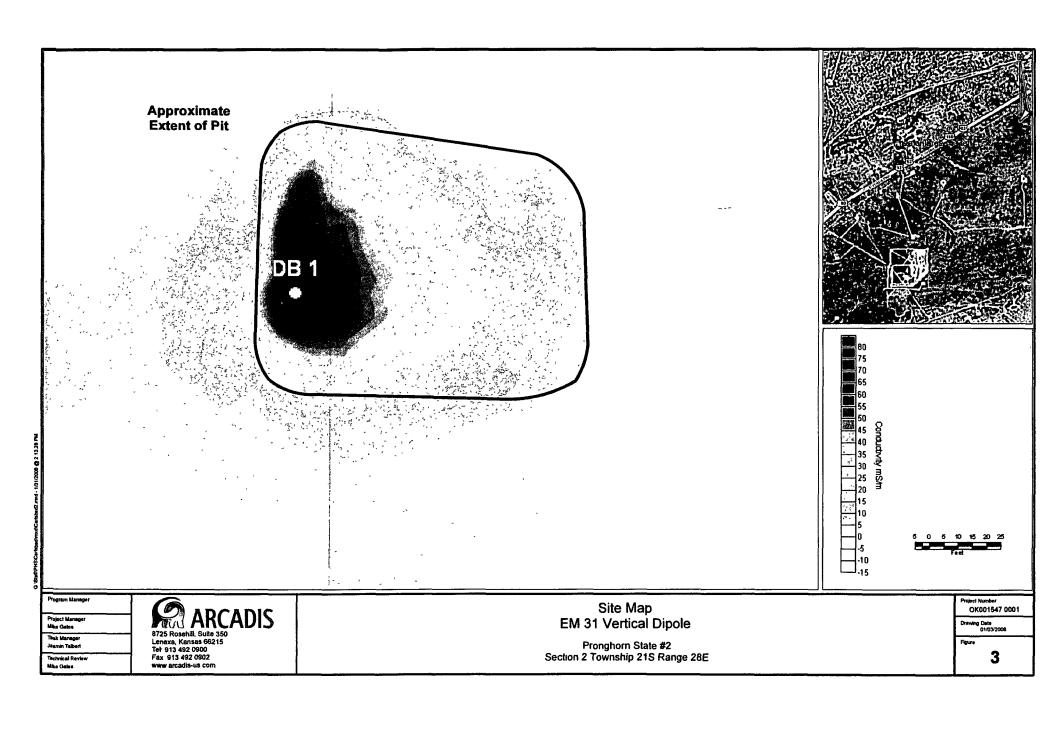
## ARCADIS Table 5 Petroleum Hydrocarbon Parameters Analysis; Shallow and Deep Soil Boings Seaschar #2 Bit Shallow Soil Borings Pronghorn #2 Pit, Shallow Soil Borings Eddy County, New Mexico

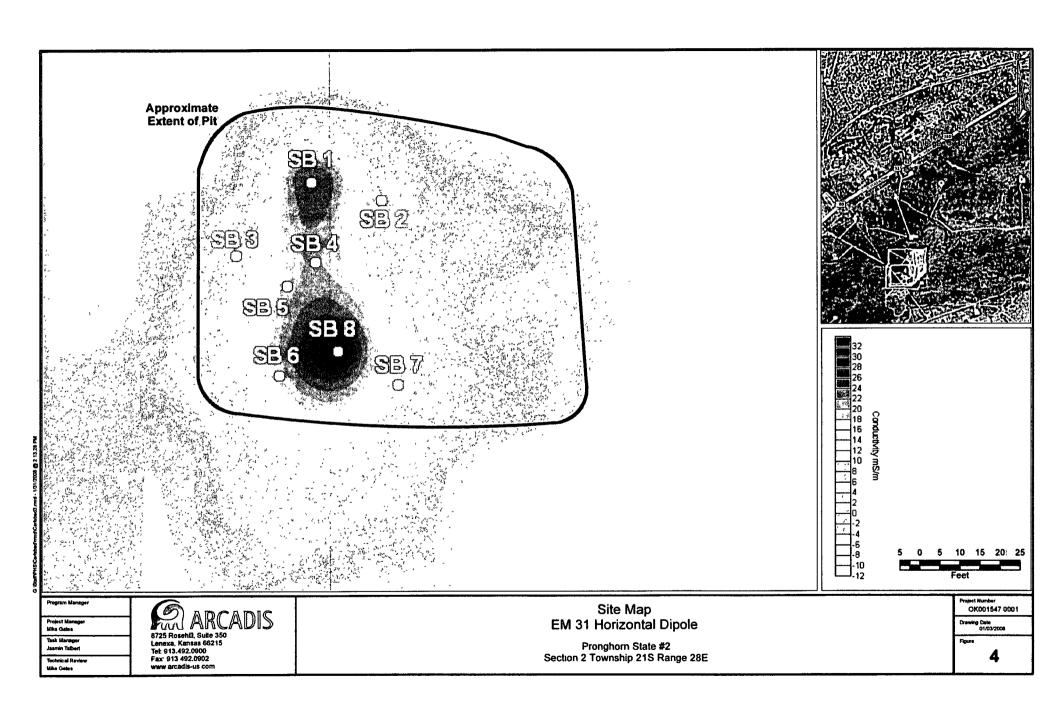
		В	TX1005 Extended			
	Benzene	Toluene	Ethylbenzene	Xylene	C6-C12	>C12-C35
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
144974 - DSB-2 5-10'					<50.0	<50.0
144975 - DSB-2 0-5'					<50.0	<50.0
144976 - DSB-1 0-5'				-	<50 0	<50.0
144977 - DSB-1 5-10'					<50 0	<50.0
144978 - SSB-1 0-2.5'	<0 0100	<0.0100	<0.0100	0.0370	70.4	2240
144979 - SSB-1 2.5-5'	<0.0100	<0.0100	<0.0100	0.0494	<50.0	614
144980 - SSB-8 0-2.5'	<0.0100	<0.0100	<0.0100	0.0311	<50.0	102
144981 - SSB-8 2.5-5'	<0.0100	<0.0100	<0.0100	<0.0100	<50 0	<50 0

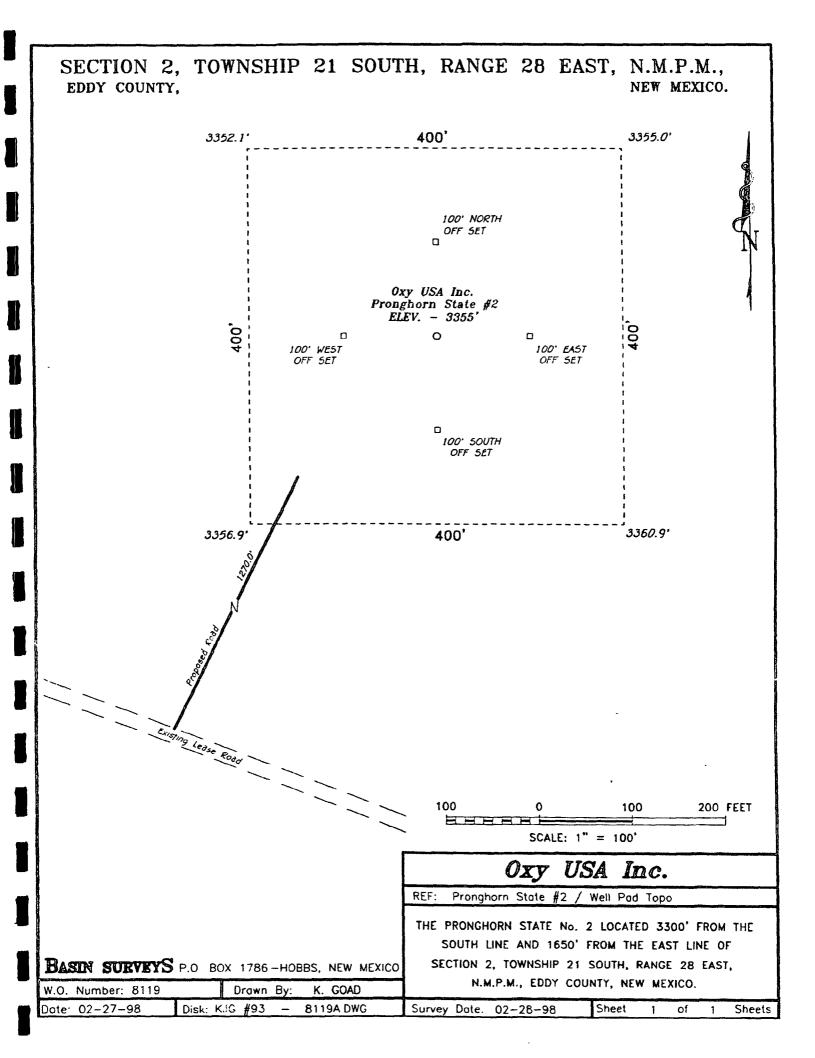


Technical Review Mike Geles



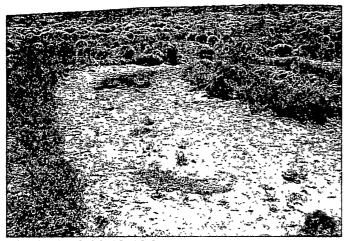




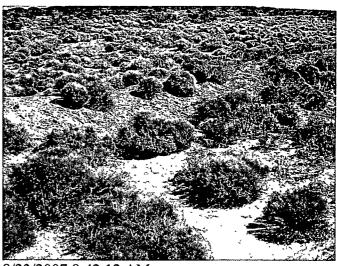


### PRONGHORN STATE No. 2 EDDY COUNTY, NEW MEXICO

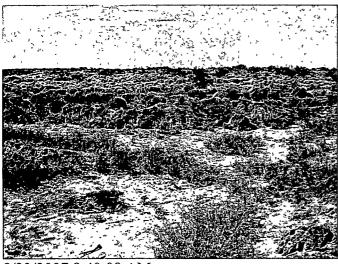
#### PIT INVESTIGATION PHOTOGRAPHS



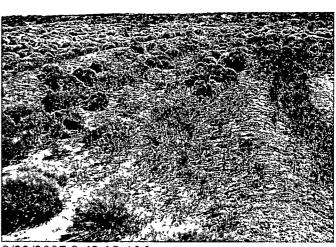
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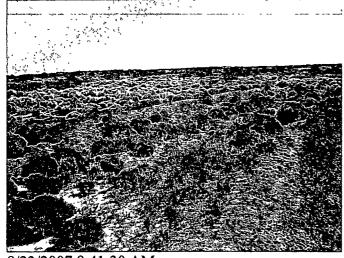
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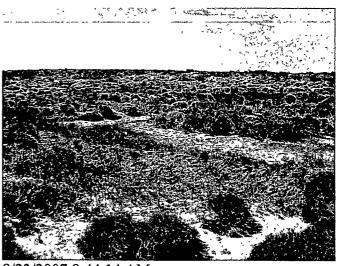
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8/23/2007 8:42:18 AM



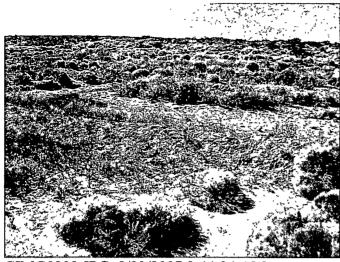
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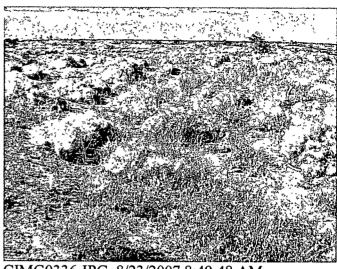
8/23/2007 8:44:14 AM

### PRONGHORN STATE No. 2 EDDY COUNTY, NEW MEXICO

#### PIT INVESTIGATION PHOTOGRAPHS



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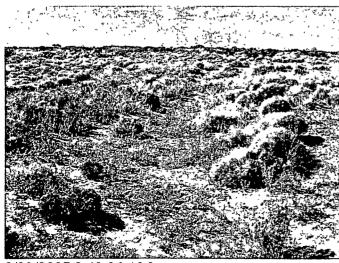
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8/23/2007 8:48:46 AM

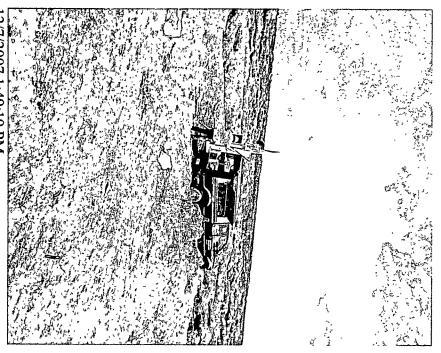


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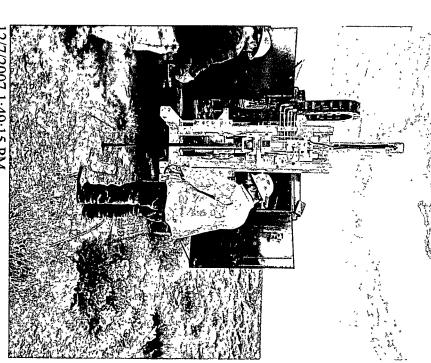


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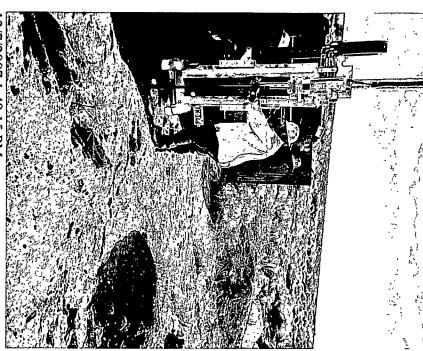
# PRONGHORN STATE No. 2 PIT INVESTIGATION PHOTOGRAPHS



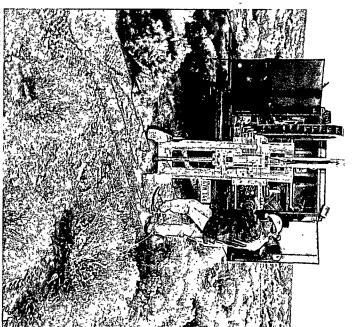
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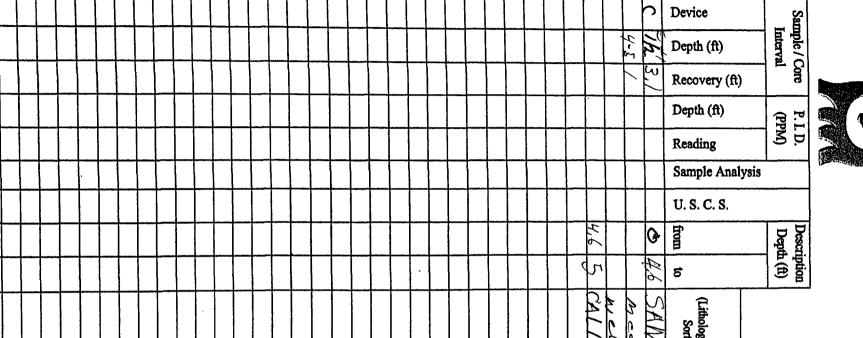
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## **BORING LOG**

Well No.: 258

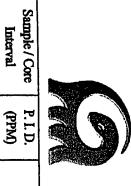
Client Name: Oxy
Site Location: Let 1 USA Et Al Po-

Drilling Co .: Harrison Drilling Method: Geo Sample Method: \_\_\_\_\_\_

Logged By: Project No.: Ok

Driller: Leonar

gy, Munsell Color, Grain Size w/percentages (most to least), Roundness, ring, Consistency/Hardness, Moisture Content, Bedding, Fractures,  Additional Remarks)
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2,2	<b>B</b> C
	BORING
Date	5
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Site Location: Let Client Name: Oxy Well USA 50

Project No.: Ok Driller: Leonare Sample Method: \_\_\_\_\_\_\_ Drilling Method: Geo

Description
Depth (ft)

Logged By:

Drilling Co.: Harrison

(Lithology, Munsell Color, Grain Size w/percentages (most to least), Roundae	Description

	Sample A	naly	sis
	U. S. C.	S.	
,	from to		
	to		
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(Lithology, Munsell Color, Grain Size w/percentages (most to least), Roundness, Sorting, Consistency/Hardness, Moisture Content, Bedding, Fractures, Additional Remarks)	Description	Drilling Co.: Harrison Driller. Leonare

Device

Depth (ft)

Recovery (ft)

1	 			 	 	 	 	 ٠١	 	_	_	 	 	 	 		 	 	 						
																									Depth (ft)
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									-																U. S, C. S.
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																, , ,				CAND as about staining	<b>₩</b>	`	moduli france oposing in	SAND 2.5 / 6/6 /25 17 red	(Lithology, Munsell Color, Grain Size w/percentages (most to least), Roundnes Sorting, Consistency/Hardness, Moisture Content, Bedding, Fractures, Additional Remarks)



**BORING LOG** 

Well No.: 55B-3 Date Drilled: 12/E/07 Client Name: Oxy USA Et Al Prong horn States

Site Location: Lot 18 sec 2 2/S 28E Eddy C. NM

Project No.: Ok 1547, | Drilling Method: Geo Drobe

S	imple Inter	/ Core val		I.D. PPM)				ription th (ft)	Project No.: Ok 1547/ Drilling Method: Geo probe
	1	T		Ť	sis				Project No.: Ok 1547.   Drilling Method: Geo probe Logged By: RL, JT   Sample Method: C. Drilling Co.: Harrison   Driller: Leanard
		€			Sample Analysis	ró			Description
<u>.</u> 2	⊕ ⊕	Recovery (ft)	Depth (ft)	Reading	ple A	C. S.			(Lithology, Munsell Color, Grain Size w/percentages (most to least), Roundness,
Device	Depth (A)	Rec	i	Rea	Sarr	U.S.	from	to	Sorting, Consistency/Hardness, Moisture Content, Bedding, Fractures, Additional Remarks)
C	14	3,5	4	<b>.</b>			8	3	SAND 2.5 YR 6/6 /ight real medium grained schangelor well serted loose CALICHE 2.5 YR 8/1 White
	44:	5//	-	_	—			<u> </u>	medium grained subangular
<b> </b>	╂		-	-	╂—		3		Well sented lowe
-	┤─-	+-	-	┼	┼		->	5	CALICITE 2.5/1 8/1WAITE
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Depth (ft) (PPM) Reading Sample Analysis U. S. C. S. Depth (ft) Description Project No.: Ok / Logged By: 1/2 Site Location: Lot Well No.: 55 b-4 Date Drilled: 12 / \$ / 07
Client Name: Oxy USA Et Al Pring horn States
Site Location: Lot 18 sec 2 215 28E Eddy CNM Drilling Co.: Harrison Logged By: 1547, Description Drilling Method: Geo probe Driller. Leonare Sample Method:

Interval

(Lithology, Munsell Color, Grain Size w/percentages (most to least), Roundness, Sorting, Consistency/Hardness, Moisture Content, Bedding, Fractures, SANU Additional Remarks) red

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Depth (ft)

Recovery (ft)

Well No.: 55 B - "

**BORING LOG** 

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### **BORING LOG**

Well No.: Date Drilled: 12/ VSA Et-Al Prong h 407

Site Location: Lot Client Name: Oxy

Drilling Co .: Harrison Logged By: Project No.: Ok Sample Method: \_\_\_\_\_\_\_\_\_ Drilling Method: Geo probe Driller: Leonare

Sample / Core Interval

(PPM) P. I. D.

Depth (ft) Description



Description

Sample / Core

BORING LOG Well No.: SSB- Date Drilled: 12/\$/07

Client Name: Oxy USA Et Al Prog horn State
Site Location: Lot 18 sec 2 2/5 28E Eddy G. NM

Project No.: Ok 1547 | Drilling Method: Geo probe

		Interv	val	(I	PPM)			Dep	th (ft)	Logged By: RL, JT Sample Method: C.
						sis.	1			Drilling Co.: Harrison Driller: Leonard
	ice	Depth (ft)	Recovery (ft)	Depth (ft)	Reading	Sample Analysis	U. S. C. S.			Logged By: RL, JT Sample Method: C  Drilling Co.: Harrison Driller: Leanard  N 3 2 3 0 40 - 4" Description W / 0 2 03 /3 4"  (Lithology, Munsell Color, Grain Size w/percentages (most to least), Roundness,
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Well No.: 55 7 Date Drillod: 12 18  Client Name: Oxy USA FAL 7-19 hard Site Location: Let 11 see 2 215 37 Each  Project No.: Ok 15 43 1 Drilling Method: Geoph  Reading Anal S.  Description  Descriptio										
Well No.: 55 7 Date Drillod: 12 / \$  Client Name: Oxy USA & All Congression Location:										
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BORING LOG  Well No.: SSR - 7 Date Drilled: 12 / 8.  Client Name: Oxy USA Et Al. 12 / 8.  Site Location: Lot 18. sec 2. 215 295 Ed. a.  Site Location: Lot 18. sec 2. 215 295 Ed. a.  Site Location: Lot 18. sec 2. 215 295 Ed. a.  Site Location: Lot 18. sec 2. 215 295 Ed. a.  Project No.: Ok 15 43/ Drilling Method: Geophysis  Depth (ft)  Depth (ft)  Depth (ft)  Depth (ft)  Depth (ft)  Depth (ft)  Description  Logged By: Al. 1 Sample Method: Geophysis  Description  Description  Description  Description  Additional Remarks)  Additional Remarks)  Additional Remarks										
BORING LOG  Well No.: \$\frac{5\hat{3}}{2\hat{4}} \tag{Date Drilled: 12 \hat{3}}{2\hat{5}}  Client Name: \$\text{Cyy USA Ft-Al. For any hor a site Location: Let \( \text{ sec 2. 275 39\hat{7}}{2\hat{5}} \) Endre Drilled: \( \text{ 2. 39\hat{5}}{2\hat{5}} \) And Drilled: \( \text{ 2. 39\hat{5}}{2\hat{5}} \) And Drilling Method: \( \text{ Sec 4. 275 39\hat{5}}{2\hat{5}} \) Ending Method: \( \text{ Sec 4. 275 39\hat{5}}{2\hat{5}} \) Ending Method: \( \text{ Sec 4. 275 39\hat{5}}{2\hat{5}} \) Ending Method: \( \text{ Sec 4. 275 39\hat{5}}{2\hat{5}} \) Ending Method: \( \text{ Sec 4. 275 39\hat{5}}{2\hat{5}} \) Ending Method: \( \text{ Sec 4. 275 39\hat{5}}{2\hat{5}} \) Ending Method: \( \text{ Sec 4. 275 39\hat{5}}{2\hat{5}} \) Ending On: \( \text{ Harrison} \) Drilling On: \( \text{ Harrison} \) Drilling: \( \text{ Sec 4. 275 39\hat{5}}{2\hat{5}} \) Ending One \( \text{ Sec 4. 275 39\hat{5}}{2\hat{5}} \) Ending One \( \text{ Softing.} \) Consistency/Hardness, Mositure Content, Bodding, Fracture Additional Remarks)  Here \( \text{ Sec 4. 275 39\hat{5}}{2\hat{5}} \) And \( \text{ Sec 5. 275 39\hat{5}}{2\hat{5}} \) And \( \text{ Sec 5. 275 39\hat{5}{2\hat{5}} \) And \( \text{ Sec 5. 275 39\hat{5} \) And \						-				
Well No.: SSR -7 Date Drilled: 12/8.  Client Name: Dxy USA EAL Form Site Location: Let 115 sec 2 7/5 28 Each  Client Name: Dxy USA EAL Form Site Location: Let 115 sec 2 7/5 28 Each  Client Name: Dxy USA EAL Form Site Location: Let 115 sec 2 7/5 28 Each  Project No.: Ok 15 472   Drilling Method: Gee 2  Depth (ft)   Description   Logged By: PL UI Sample Method: Gee 2  Depth (ft)   Depth (ft)   Drilling Co.: Harrisa   Driller Lecand to 12  Depth (ft)   Description   Description    Record   Depth (ft)   Description    Description   Description   Description    Logged By: PL UI Sample Method: Gee 2  Depth (ft)   Depth (ft)   Drilling Co.: Harrisa   Driller Lecand to 12  Depth (ft)   Description   Description    Logged By: PL UI Sample Method: Gee 2  Depth (ft)   Depth (ft)   Drilling Co.: Harrisa   Driller Lecand to 12  Depth (ft)   Depth (ft)   Description    Logged By: PL UI Sample Method: Gee 2  Depth (ft)   Depth (ft)   Drilling Co.: Harrisa   Driller Lecand to 12  Depth (ft)   Depth (ft)   Description    Logged By: PL UI Sample Method: Gee 2  Depth (ft)   Depth (ft)   Description    Logged By: PL UI Sample Method: Gee 2  Depth (ft)   Depth (ft)   Description    Logged By: PL UI Sample Method: Gee 2  Depth (ft)   Description   Description    Logged By: PL UI Sample Method: Gee 2  Description   Description   Description    Logged By: PL UI Sample Method: Gee 2  Description   Description   Description   Description    Logged By: PL UI Sample Method: Gee 2  Description   Description   Description   Description    Logged By: PL UI Sample Method: Gee 2  Description   Descriptio										
Well No.: SSR -7 Date Drilled: 12/8.  Client Name: Dxy USA EAL Comp.  Site Location: Dxy USA EAL Comp.  Site Location: Log USA EAL Comp.  Site Location: Log USA EAL Comp.  Site Location: Log USA EAL Comp.  Project No.: Ok 15 47-1 Drilling Method: Geo.  Logged By: AL USA EAL Comp.  Description  Record to see 2 2/5 23/2 Eacl.  Depth (ft)  Depth (ft)  Depth (ft)  Description  Read Solution Sorting, Consistency/Hardness, Moisture Content, Bedding, Fracture  Additional Remarks)  Log State Log USA Each, Log State Log										
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BORING LOG   Secondary   Boring   Boring   Secondary								7		
Well No.: 55 H · 7 Date Drilled: 12 J Stample / Core P. I.D.  Interval (PPM)  Project No.: Oxy USA Et Al. 12 J Stample Method: Geopher over the period of th							1	$\dashv$		
Well No.: 558 7 Date Drilled: 12 8  Client Name: Oxy USA E+A1 Prop Site Location: Let 18 sec 2 7/5 29 E-6 J  Site Location: Let 18 sec 2 7/5 29 E-6 J  Site Location: Let 18 sec 2 7/5 29 E-6 J  Site Location: Let 18 sec 2 7/5 29 E-6 J  Site Location: Let 18 sec 2 7/5 29 E-6 J  Project No.: Ok 15 43 1 Drilling Method: Geo p  Read ding Co.: Harrison Diller: Lecana te  Description  Description  Description  Logged By: AL 1 Sample Method: Geo p  Sorting, Consistency/Hardness, Moisture Context, Bodding, Fracture  Additional Remarks)  Additional Remarks										
Well No.: 55 R - 7 Date Drilled: 12 / 8  Well No.: 55 R - 7 Date Drilled: 12 / 8  Client Name: Oxy USA E+AL F-49 hora Site Location: Let 18 sec 2 2/5 28 E-64  Site Location: Let 18 sec 2 2/5 28 E-64  Project No.: Ok 15 47 Drilling Method: Geo b										
Well No.: 55R -7 Date Drilled: 12/8  Client Name: Oxy USA E+A1 Prop horn  Site Location: Lot 15 43-1 Drilling Method: Geo p  (PPM)  Description  Interval  (PPM)  Description  Project No.: Ok 15 43-1 Drilling Method: Geo p  Project No.: Ok 15 43-1 Drilling Method: Geo p  Depth (ft)  Logged By: AL // Sample Method: C  Depth (ft)  Drilling Co.: Harrison Driller: Lecundary  Description										
Well No.: 558 7 Date Drilled: 12 8  Client Name: Oxy USA E+A1 12-19 horn Site Location: Let 18 sec 2 2/5 28 E-d-d  Site Location: Let 18 sec 2 2/5 28 E-d-d  Site Location: Let 18 sec 2 2/5 28 E-d-d  Site Location: Let 18 sec 2 2/5 28 E-d-d  Site Location: Let 18 sec 2 2/5 28 E-d-d  Site Location: Let 18 sec 2 2/5 28 E-d-d  Site Location: Let 18 sec 2 2/5 28 E-d-d  Site Location: Let 18 sec 2 2/5 28 E-d-d  Site Location: Let 18 sec 2 2/5 28 E-d-d  Site Location: Let 18 sec 2 2/5 28 E-d-d  Somple Method: Geo p  Description  Descriptio					$\top$	$\dagger$	$\dashv$			
Well No.: 558 7 Date Drilled: 12/8  Client Name: Oxy USA Et At 12/9 hor a  Site Location: Let 18 sec 2 2/5 28 Et At  Client Name: Oxy USA Et At  Cox 15/47   Drilling Method: Gee b  Description  Description  Description  Description  Description  Description  Description  Additional Remarks)					$\top$	+	$\top$			
BORING LOG   Steel No.: 55 R - 7   Date Drilled: 12   8	ZISYK 8/1 White Sof	5	4		1	+-	┪			
BORING LOG   Steel Name:   Oxy USA E+AL   Steel   Steel Location:   Logged By:   PL   USA E+AL   Steel Location:   Logged By:   PL   USA E+	ated loose									
Well No.: 55R 7 Date Drilled: 12/8  Well No.: 55R 7 Date Drilled: 12/8  Client Name: Oxy USA E+AL Prop hora  Site Location: Lot 18 sec 2 7/8 28F E-d-d  Site Location: Lot 18 sec 2 7/8 28F E-d-d  Site Location: Lot 18 sec 2 7/8 28F E-d-d  Site Location: Lot 18 sec 2 7/8 28F E-d-d  Project No.: Ok 1547/ Drilling Method: Geop  Interval (PPM)  Get Core  Get Grand Project No.: Ok 1547/ Drilling Method: Core  Depth (ft)  Depth (ft)  Logged By: A2 VI Sample Method: Core  Description	councel Subune yla						_	51	21-4	
BORING LOG  Well No.: 55 R - 7 Date Drilled: 12 Repth (ft)  Interval (PPM)  (ft)	D 2.548 6/6 11544	X	Ø					অ	F.	
Well No.: $55\beta$ . 7 Date Drilled: $12/5$ Client Name: $0xy$ $USA$ Et Al. 12.19 hord Site Location: Lot 18 sec 2 2/5 287 Ed. 1  P. I. D. Description Project No.: $0k$ $1547$ Drilling Method: $0k$ $1547$ Sample Method: $0k$ Drilling Co.: $0k$ $1547$ Driller: Leanard	Description  (Lithology, Munsell Color, Grain Size w/percentages (most to least), Roundness, Sorting, Consistency/Hardness, Moisture Content, Bedding, Fractures, Additional Remarks)	Ę,	from	U. S. C. S.	Sample Anal	Reading			Depth (ft)	Device
BORING LOG  Well No.: 55 \( \beta \cdot \)  Well No.: 55 \( \beta \cdot \eta \)  Well No.: 55 \( \beta \cdot \eta \)  Client Name: \( \beta \chi \) USA \( \beta \chi \) A \( \beta \cdot \eta \chi \)  Site Location: \( \lambda \chi \) Is sec 2 \( \lambda \chi \) 28\( \beta \chi \)  P. I. D.  Description  Project No.: \( \beta \chi \) 15 \( \frac{17}{7} \) Drilling Method: \( \beta \chi \eta \chi \)  Logged By: \( \frac{7}{7} \) Sample Method: \( \beta \chi \eta \chi \)	Harrison Driller Leone				ysis					
Hora to	15 47 1 Drilling Method: Geo	iption h (ft)	Desc Dep			PPM)	O 19	E Core	naple /	န္ဆ
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## **BORING LOG**

Well No.: 55B-8 Date Drilled: 12/3/07 Client Name: 0xy USA Et Al Page horn States. Site Location: Lot 18 sec 2 215 282 Eddy C. N.M.



**BORING LOG** Well No.: 158-1 Date Drilled: 12/5/07
Client Name: Oxy USA Et Al Prong horn States
Site Location: Lot 18 sec 2 218 28E Eddy C. NM
Period No. 21/2/2019

	Sa	mple /		P.	I.D.				iption	Project No.: Ok 1547, 1 Drilling Method: Geo brobe
		Interv		(P.	PM)				h (ft)	Project No.: Ok 1547/1 Drilling Method: Geo probe  Logged By: RL, JT Sample Method: C  Drilling Co.: Harrison Driller: Leonard
ı		T	T	T	T	.≊				Drilling Co.: Harrison Driller Leonard
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P. I. D.

(PPM)

Sample / Core

Interval

Device

**BORING LOG** Well No.: PSB-Z Date Drilled: 12/5/07
Client Name: Oxy USA Et Al Prong horn States
Site Location: Lot 18 sec 2 2/5 28E Eddy G. N.M.

Project No.: Ok 1547/ Drilling Method: Geo probe

Logged By: PL, JT

Sample Method: C,

Drilling Co.: Harrison

Driller: Leonard

N 32° 30-397 Description 104° 03' 139"
(Lithology, Munsell Color, Grain Size w/percentages (most to least), Roundness, Sorting, Consistency/Hardness, Moisture Content, Bedding, Fractures

Sample Analysis Recovery (ft) U. S. C. S. Depth (ft) Reading from

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 8-12	3.7				1005-e,
12.1	3,8		2.3	5.3	CALICAE 2.34R 8/1 White.
16-20	3.9				Scft
			5.5	20	SAND 2 3 VR 8/1 light Red
					fine grained, Subaneulas well

Description

Depth (ft)

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				ソ			ŀ	7'	

Page Number: 1 of 1 OXY-Pronghorn State #2

#### **Summary Report**

Michael Gates Arcadis-Tulsa 5100 East Skelly Drive Suite 1000 Tulsa, OK, 74135

Report Date: December 17, 2007

Work Order: 7121024

Project Location: OXY-Pronghorn State #2

Project Name: OK001547.0001 Project Number: OK001547.0001

			Date	$\mathbf{Time}$	Date
Sample	Description	Matrix	$\mathbf{Taken}$	Taken	Received
144974	DSB-2 5-10'	soil	2007-12-07	10:03	2007-12-10
144975	DSB-2 0-5'	soil	2007-12-07	09:43	2007-12-10
144976	DSB-1 0-5'	soil	2007-12-07	10.30	2007-12-10
144977	DSB-1 5-10'	soil	2007-12-07	10:42	2007-12-10
144978	SSB-1 0-2.5'	soil	2007-12-07	12:12	2007-12-10
144979	SSB-1 2.5-5'	soil	2007-12-07	12:15	2007-12-10
144980	SSB-8 0-2.5'	soil	2007-12-07	11:05	2007-12-10
144981	SSB-8 2.5-5'	soil	2007-12-07	11:10	2007-12-10

		]		TX1005 Extended		
	Benzene	Toluene	Ethylbenzene	Xylene	C6-C12	>C12-C35
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
144974 - DSB-2 5-10'			<u>-</u>		< 50 0	< 50 0
144975 - DSB-2 0-5'				ì	< 50 0	< 50.0
144976 - DSB-1 0-5'					< 50.0	< 50 0
144977 - DSB-1 5-10'					< 50.0	< 50.0
144978 - SSB-1 0-2.5'	< 0 0100	< 0.0100	< 0.0100	0.0370	70.4	2240
144979 - SSB-1 2.5-5'	< 0 0100	< 0.0100	< 0.0100	0.0494	< 50.0	614
144980 - SSB-8 0-2.5'	< 0.0100	< 0.0100	< 0 0100	0.0311	< 50 0	102
144981 - SSB-8 2.5-5'	< 0 0100	< 0.0100	< 0.0100	< 0.0100	< 50.0	< 50.0



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Texas 79424

#### Analytical and Quality Control Report

Michael Gates Arcadis-Tulsa 5100 East Skelly Drive **Suite 1000** Tulsa, OK, 74135

Report Date: December 17, 2007

Work Order: 7121024

Project Location:

OXY-Pronghorn State #2

Project Name: Project Number:

OK001547.0001 OK001547.0001

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

			Date	${f Time}$	Date
Sample	Description	Matrix	Taken	Taken	Received
144974	DSB-2 5-10'	soil	2007-12-07	10:03	2007-12-10
144975	DSB-2 0-5'	soil	2007-12-07	09:43	2007-12-10
144976	DSB-1 0-5'	soil	2007-12-07	10:30	2007-12-10
144977	DSB-1 5-10'	soil	2007-12-07	10:42	2007-12-10
144978	SSB-1 0-2.5'	soil	2007-12-07	12:12	2007-12-10
144979	SSB-1 2.5-5'	soil	2007-12-07	12:15	2007-12-10
144980	SSB-8 0-2.5'	soil	2007-12-07	11:05	2007-12-10
144981	SSB-8 2.5-5'	soil	2007-12-07	11:10	2007-12-10

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 10 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

#### Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

#### Case Narrative

Samples for project OK001547.0001 were received by TraceAnalysis, Inc. on 2007-12-10 and assigned to work order 7121024. Samples for work order 7121024 were received intact at a temperature of 4.0 deg C.

Samples were analyzed for the following tests using their respective methods.

Test	Method
BTEX	S 8021B
TX1005 Extended	TX1005

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 7121024 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Report Date: December 17, 2007 OK001547.0001 Work Order: 7121024 OK001547.0001 Page Number: 3 of 10 OXY-Pronghorn State #2

#### Analytical Report

Sample: 144974 - DSB-2 5-10'

Analysis: TX1005 Extended

QC Batch: 43867 Prep Batch: 37803 Analytical Method: TX1005
Date Analyzed: 2007-12-13
Sample Preparation: 2007-12-13

Prep Method: N/A Analyzed By: LD Prepared By: LD

		m RL			
Parameter	Flag	Result	Units	Dilution	RL
C6-C12		< 50.0	mg/Kg	1	50.0
>C12-C35		< 50.0	$\mathrm{mg}/\mathrm{Kg}$	1	50.0

					$\mathbf{Spike}$	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		144	mg/Kg	1	100	144	13 - 219

Sample: 144975 - DSB-2 0-5'

Analysis: TX1005 Extended

QC Batch: 43867 Prep Batch: 37803 Analytical Method: TX1005
Date Analyzed: 2007-12-13
Sample Preparation: 2007-12-13

Prep Method N/A
Analyzed By: LD
Prepared By: LD

		m RL			
Parameter	Flag	Result	Units	Dilution	RL
C6-C12		< 50.0	mg/Kg	1	50.0
>C12-C35		< 50.0	mg/Kg	1	50.0

					$\mathbf{Spike}$	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		173	mg/Kg	1	100	173	13 - 219

Sample: 144976 - DSB-1 0-5'

Analysis: TX1005 Extended QC Batch: 43867 Prep Batch: 37803 Analytical Method: TX1005
Date Analyzed: 2007-12-13
Sample Preparation: 2007-12-13

Prep Method: N/A Analyzed By: LD Prepared By: LD

		RL			
Parameter	$\operatorname{Flag}$	Result	Units	Dilution	RL
C6-C12		< 50.0	m mg/Kg	1	50 0
>C12-C35		< 50.0	${ m mg/Kg}$	1	50.0

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		194	mg/Kg	1	100	194	13 - 219

#### Sample: 144977 - DSB-1 5-10'

Analysis:	TX1005 Extended	Analytical Method:	TX1005	Prep Method:	N/A
QC Batch:	43867	Date Analyzed:	2007-12-13	Analyzed By:	LD
Prep Batch.	37803	Sample Preparation:	2007-12-13	Prepared By:	LD

		m RL			
Parameter	$\operatorname{Flag}$	Result	Units	Dilution	RL
C6-C12		< 50.0	mg/Kg	1	50.0
>C12-C35		< 50.0	mg/Kg	1	50.0

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		207	${ m mg/Kg}$	1	100	207	13 - 219

#### Sample: 144978 - SSB-1 0-2.5'

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	43870	Date Analyzed:	2007-12-13	Analyzed By:	DC
Prep Batch:	37751	Sample Preparation:	2007-12-12	Prepared By:	DC

		$\mathbf{RL}$			
Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.0100	m mg/Kg	1	0.0100
Toluene		< 0.0100	$\mathrm{mg}/\mathrm{Kg}$	1	0.0100
Ethylbenzene		< 0.0100	$\mathrm{mg}/\mathrm{Kg}$	1	0.0100
Xylene		0.0370	m mg/Kg	1	0.0100

					$\mathbf{Spike}$	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.09	mg/Kg	1	1.00	109	70 - 130
4-Bromofluorobenzene (4-BFB)		0.966	$_{ m mg/Kg}$	1	1.00	97	70 - 130

#### Sample: 144978 - SSB-1 0-2.5'

Analysis:	TX1005 Extended	Analytical Method:	TX1005	Prep Method.	N/A
QC Batch:	43867	Date Analyzed:	2007-12-13	Analyzed By:	LD
Prep Batch:	37803	Sample Preparation:	2007-12-13	Prepared By:	LD

44.

		m RL			
Parameter	Flag	Result	Units	Dilution	RL
C6-C12		70.4	${ m mg/Kg}$	1	50.0
>C12-C35		2240	m mg/Kg	1	50 0

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane	1	712	mg/Kg	1	100	712	13 - 219

<sup>&</sup>lt;sup>1</sup>High surrogate recovery due to peak interference

#### Sample: 144979 - SSB-1 2.5-5'

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	43870	Date Analyzed:	2007-12-13	Analyzed By:	DC
Prep Batch	37751	Sample Preparation:	2007-12-12	Prepared By:	DC

		m RL			
Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0 0100	mg/Kg	1	0.0100
Ethylbenzene		< 0.0100	mg/Kg	1	0.0100
Xylene		0.0494	m mg/Kg	1	0.0100

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.10	mg/Kg	1	1.00	110	70 - 130
4-Bromofluorobenzene (4-BFB)		0.967	mg/Kg	1	1.00	97	70 - 130

#### Sample: 144979 - SSB-1 2.5-5'

Analysis:	TX1005 Extended	Analytical Method:	TX1005	Prep Method:	N/A
QC Batch:	43867	Date Analyzed:	2007-12-13	Analyzed By:	LD
Prep Batch:	37803	Sample Preparation:	2007-12-13	Prepared By:	LD

		RL			
Parameter	Flag	Result	$\mathbf{Units}$	Dilution	RL
C6-C12		< 50.0	mg/Kg	1	50.0
>C12-C35		614	m mg/Kg	1	50 0

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane	2	267	mg/Kg	1	100	267	13 - 219

#### Sample: 144980 - SSB-8 0-2.5'

Analysis:	BTEX	Analytical Method	S 8021B	Prep Method	S 5035
QC Batch:	43870	Date Analyzed:	2007-12-13	Analyzed By:	DC
Prep Batch:	37751	Sample Preparation:	2007-12-12	Prepared By:	DC

		${ m RL}$			
Parameter	Flag	Result	$\mathbf{Units}$	Dilution	RL
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	$\mathrm{mg}/\mathrm{Kg}$	1	0.0100
Ethylbenzene		< 0.0100	$\mathrm{mg}/\mathrm{Kg}$	1	0.0100
Xylene		0.0311	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	$\begin{array}{c} {\rm Spike} \\ {\rm Amount} \end{array}$	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.08	mg/Kg	1	1.00	108	70 - 130
4-Bromofluorobenzene (4-BFB)		0.920	mg/Kg	1	1.00	92	70 - 130

<sup>&</sup>lt;sup>2</sup>High surrogate recovery due to peak interference.

#### Sample: 144980 - SSB-8 0-2.5'

Analysis:	TX1005 Extended
OC Batch	12967

Analytical Method: Date Analyzed: QC Batch: 43867 Prep Batch. 37803 Sample Preparation: 2007-12-13

TX1005 2007-12-13 Prep Method: N/A Analyzed By: LDPrepared By:

		RL
rameter	Flag	Result

Parameter	Flag	Result	Units	Dilution	RL
C6-C12		< 50.0	mg/Kg	1	50.0
>C12-C35		102	mg/Kg	` 1	50.0

					$\mathbf{Spike}$	$\operatorname{Percent}$	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane	3	414	m mg/Kg	1	100	414	13 - 219

#### Sample: 144981 - SSB-8 2.5-5'

Analysis. **BTEX** QC Batch: 43870 Prep Batch: 37751

Analytical Method: S 8021B Date Analyzed: 2007-12-13 Sample Preparation: 2007-12-12 Prep Method: S 5035 Analyzed By: DC Prepared By: DC

		, RL			•
Parameter	Flag	Result	$\mathbf{Units}$	Dilution	RL
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	m mg/Kg	1	0.0100
Ethylbenzene		< 0.0100	mg/Kg	1	0.0100
Xvlene		< 0.0100	mg/Kg	1	0.0100

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.01	mg/Kg	1	1.00	101	70 - 130
4-Bromofluorobenzene (4-BFB)		0.916	m mg/Kg	1	1.00	92	70 - 130

#### Sample: 144981 - SSB-8 2.5-5'

Analysis: TX1005 Extended QC Batch: 43867 Prep Batch: 37803

Analytical Method: TX1005Date Analyzed: 2007-12-13 Sample Preparation: 2007-12-13

Prep Method: N/A Analyzed By: LD Prepared By: LD

Parameter	Flag	$\operatorname{RL}$ Result	Units	Dilution	$_{ m RL}$
$\overline{\text{C6-C12}}$		< 50.0	$\mathrm{mg}/\mathrm{Kg}$	1	50 0
>C12-C35		< 50 0	$\mathrm{mg}/\mathrm{Kg}$	1	50.0

					$\mathbf{Spike}$	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		208	$_{ m mg/Kg}$	1	100	208	13 - 219

<sup>&</sup>lt;sup>3</sup>High surrogate recovery due to peak interference

Report Date: December 17, 2007

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Work Order: 7121024 OK001547.0001

Page Number: 7 of 10 OXY-Pronghorn State #2

Method Blank (1)

QC Batch: 43867

QC Batch: Prep Batch: 37803

43867

Date Analyzed: QC Preparation: 2007-12-13

2007-12-13

Analyzed By: LD Prepared By: LD

MDL

Parameter	Flag	Result	Units	RL
C6-C12		<11.2	mg/Kg	50
>C12-C35		<21.1	mg/Kg	50

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		133	mg/Kg	1	100	133	34.9 - 142.3

Method Blank (1)

QC Batch: 43870

43870 QC Batch:

Date Analyzed:

2007-12-13

Analyzed By: DC

Prep Batch:

37751

QC Preparation. 2007-12-12

Prepared By: DC

MDL Flag Result Parameter

Units RLBenzene < 0.00300 mg/Kg 0.01Toluene < 0.00300 mg/Kg 0.01 Ethylbenzene < 0.00400 mg/Kg0.01 < 0.0140 Xylene mg/Kg 0.01

					$\mathbf{Spike}$	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		0.993	$_{ m mg/Kg}$	1	1.00	99	70 - 130
4-Bromofluorobenzene (4-BFB)		0.845	mg/Kg	1	1.00	84	70 - 130

#### Laboratory Control Spike (LCS-1)

QC Batch: 43867 Prep Batch: 37803 Date Analyzed: QC Preparation: 2007-12-13

2007-12-13

Analyzed By: LD Prepared By: LD

LCS Spike Matrix Rec. Result Units Dil. Param Amount Result Rec. Limit C6-C12 208 mg/Kg 1 250 <11.2 83 38.9 - 133 >C12-C35 293 mg/Kg 1 250 < 21.1117 46.8 - 131.2

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	$\begin{array}{c} {\bf Spike} \\ {\bf Amount} \end{array}$	Matrix Result	Rec.	Rec. Limit	RPD	$\begin{array}{c} \text{RPD} \\ \text{Limit} \end{array}$
C6-C12	185	mg/Kg	1	250	<11.2	74	38.9 - 133	12	20
>C12-C35	246	$_{ m mg/Kg}$	1	250	< 21.1	98	46.8 - 131.2	17	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ..

Work Order: 7121024 OK001547.0001 Page Number: 8 of 10 OXY-Pronghorn State #2

control	snikes	continued	
COILLIOL	sumcs	COMMINGE	

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
	LCS	LCSD			· Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	${f Units}$	Dil.	Amount	Rec.	Rec.	${f Limit}$
n-Triacontane	113	102	mg/Kg	1	100	113	102	44.6 - 120 8

#### Laboratory Control Spike (LCS-1)

QC Batch: 43870 Prep Batch: 37751 Date Analyzed: 2007-12-13 QC Preparation: 2007-12-12 Analyzed By: DC Prepared By: DC

	LCS			Spike	Matrix		Rec.
Param	Result	$\mathbf{Units}$	Dil.	Amount	Result	Rec.	Limit
Benzene	0.985	mg/Kg	1	1.00	< 0.00300	98	70 - 130
Toluene	0.977	mg/Kg	1	1.00	< 0.00300	98	70 - 130
Ethylbenzene	0.979	mg/Kg	1	1.00	< 0.00400	98	70 - 130
Xylene	2.92	mg/Kg	1	3.00	< 0.0140	97	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		$\operatorname{Rec}$		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene	0.991	mg/Kg	1	1.00	< 0.00300	99	70 - 130	1	
Toluene	0.981	mg/Kg	1	1.00	< 0.00300	98	70 - 130	0	
Ethylbenzene	0.985	mg/Kg	1	1.00	< 0.00400	98	70 - 130	1	
Xylene	2.94	mg/Kg	1	3.00	< 0.0140	98	70 - 130	1	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			$_{ m Spike}$	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	${f Limit}$
Trifluorotoluene (TFT)	1.05	1.04	mg/Kg	1	1.00	105	104	70 - 130
4-Bromofluorobenzene (4-BFB)	0.854	0.850	mg/Kg	1	1.00	85	85	70 - 130

#### Matrix Spike (MS-1) Spiked Sample. 144974

QC Batch: 43867 Prep Batch: 37803 Date Analyzed: 2007-12-13 QC Preparation: 2007-12-13 Analyzed By: LD Prepared By: LD

	MS		•	$_{ m Spike}$	Matrix		${ m Rec.}$
Param	Result	${f Units}$	Dil.	Amount	Result	Rec.	Limit
C6-C12	68.8	mg/Kg	1	250	<11.2	28	20 2 - 182.1
>C12-C35	124	mg/Kg	1	250	<21.1	49	38.8 - 184.9

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

		MSD			Spike	Matrix		Rec.		RPD
Param		Result	Units	Dil	Amount	Result	Rec.	$\mathbf{Limit}$	RPD	Limit
C6-C12	4	88.8	mg/Kg	1	250	<11.2	36	20.2 - 182.1	25	20

continued ...

<sup>&</sup>lt;sup>4</sup>MS/MSD RPD out of RPD Limits Use LCS/LCSD to demonstrate analysis is under control.

Report Date: December 17, 2007 OK001547.0001 Work Order: 7121024 OK001547.0001 Page Number: 9 of 10 OXY-Pronghorn State #2

matrix spikes continued ...

		MSD			Spike	Matrix		${ m Rec}.$		RPD
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
>C12-C35	5	167	mg/Kg	1	250	<21.1	67	38.8 - 184.9	30	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Triacontane	90.4	97.1	mg/Kg	1	100	90	97	22.2 - 162.2

Matrix Spike (MS-1) Spiked Sample: 144978

QC Batch: 43870 Prep Batch: 37751 Date Analyzed: 2007-12-13 QC Preparation: 2007-12-12 Analyzed By: DC Prepared By: DC

Param	${ m MS}$ Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec Limit
Benzene	1.21	${ m mg/Kg}$	1	1.00	< 0.00300	121	70 - 130
Toluene	1.21	mg/Kg	1	1.00	< 0.00300	121	70 - 130
Ethylbenzene	1.22	mg/Kg	1	1.00	< 0.00400	122	70 - 130
Xylene	3.75	mg/Kg	1	3.00	0.037	124	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	$rac{ ext{MSD}}{ ext{Result}}$	Units	Dil.	$egin{array}{c}  ext{Spike} \  ext{Amount} \end{array}$	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
ratain	nesun	Omes	Dii.	Amount	nesun	nec.	PHHHP	ILI D	Limit
Benzene	1.11	mg/Kg	1	1.00	< 0.00300	111	70 - 130	9	
Toluene	1.11	$_{ m mg/Kg}$	1	1.00	< 0.00300	111	70 - 130	9	
Ethylbenzene	1.12	mg/Kg	1	1.00	< 0.00400	112	70 - 130	8	
Xylene	3.40	mg/Kg	1	3.00	0.037	112	70 - 130	10	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	$rac{ ext{MS}}{ ext{Result}}$	$\begin{array}{c} \text{MSD} \\ \text{Result} \end{array}$	Units	Dil.	Spike Amount	MS Rec.	MSD Rec	$egin{array}{c}  ext{Rec.} \  ext{Limit} \end{array}$
Trifluorotoluene (TFT)	1.10	1 11	mg/Kg	1	1	110	111	70 - 130
4-Bromofluorobenzene (4-BFB)	0.966	0.964	mg/Kg	1	1	97	96	70 - 130

Standard (CCV-1)

QC Batch: 43867

Date Analyzed: 2007-12-13

Analyzed By: LD

			CCVs	CCVs	CCVs	Percent	<b>.</b>
			$\mathbf{True}$	$\mathbf{Found}$	$\operatorname{Percent}$	Recovery	$\mathbf{Date}$
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
C6-C12		mg/Kg	250	189	76	75 - 125	2007-12-13
>C12-C35		$_{ m mg/Kg}$	250	251	100	75 - 125	2007-12-13

Standard (CCV-2)

QC Batch: 43867

Date Analyzed: 2007-12-13

Analyzed By: LD

<sup>&</sup>lt;sup>5</sup>MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

Report Date: December 17, 2007 OK001547.0001 Work Order: 7121024 OK001547.0001 Page Number: 10 of 10 OXY-Pronghorn State #2

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
C6-C12		mg/Kg	250	191	76	75 - 125	2007-12-13
>C12-C35		mg/Kg	250	260	104	75 - 125	2007-12-13

#### Standard (CCV-3)

QC Batch: 43867

Date Analyzed: 2007-12-13

Analyzed By: LD

			CCVs True	$\operatorname{CCVs}$ $\operatorname{Found}$	${ m CCVs} \ { m Percent}$	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
C6-C12		mg/Kg	250	223	89	75 - 125	2007-12-13
>C12-C35	•	mg/Kg	250	253	101	75 - 125	2007-12-13

#### Standard (ICV-1)

QC Batch: 43870

Date Analyzed: 2007-12-13

Analyzed By: DC

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	$egin{array}{l}  ext{ICVs} \  ext{Percent} \  ext{Recovery} \end{array}$	Percent Recovery Limits	$\begin{array}{c} \text{Date} \\ \text{Analyzed} \end{array}$
Benzene		mg/Kg	0.100	0.103	103	85 - 115	2007-12-13
Toluene		mg/Kg	0.100	0.102	102	85 - 115	2007-12-13
Ethylbenzene		mg/Kg	0.100	0.102	102	85 - 115	2007-12-13
Xylene		${ m mg/Kg}$	0.300	0.304	101	85 - 115	2007-12-13

#### Standard (CCV-1)

QC Batch: 43870

Date Analyzed: 2007-12-13

Analyzed By: DC

			CCVs	CCVs	CCVs	Percent	
			$\mathbf{True}$	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/Kg	0.100	0.108	108	85 - 115	2007-12-13
Toluene		mg/Kg	0.100	0.107	107	85 - 115	2007-12-13
Ethylbenzene		mg/Kg	0 100	0.107	107	85 - 115	2007-12-13
Xylene		mg/Kg	0.300	0.320	107	85 - 115	2007-12-13



All trato-Midland

☐ In Person

Delivery Method:

01 Km lw 712 4 **ARCADIS** CHAIN-OF-CUSTODY RECORD Page Laboratory Task Order No./P.O. No.\_\_\_\_\_ Project Number/Name \_ OK001547.0001 **ANALYSIS / METHOD / SIZE** Project Location OXY - Pronghorn State#2 (1) 4 02 jar 8724 6 jar 1005 Laboratory Trace Analysis Mike Gates Project Manager \_\_\_ Sampler(s)/Affiliation \_\_\_ARCADIS Date/XXXXXX Time Remarks Total Sample ID/Location Matrix XXXXXX Sampled 12/7/07 10:03 DSB - 2 (5-10) 144974 9:45 975 10:30 976 12/7/07/0:420 917 5513-1 (0-2.5) 12/7/07 12:12 978 SJB-1 (2,5-5') 12:15.1 979 <u>55B-8(0-2,5)</u> 12/7/07 11:05 1 980 12/7/07/11:10 981 55B-8(75-5)

	4 4		
Sample Matrix: L = Liquid; S = Solid;	A = Air	•	ottles/ giners
Relinquished by: Received by:	Organization: ARCADIS Organization: TYALL AYALLSIS	Date 12/10/07 Time 1141	Seal Intact? (es) No N/A
Relinquished by:Received by:	Organization:Organization:	i de la companya de	Seal Intact? 'es No N/A
Special Instructions/Remarks			

☐ Lab Courier

□ Other \_

SPECIFY

AG 05-12/01

☐ Common Carrier\_



out of state County

Laboratory Number: 231270 Customer Sample ID: SSB1 0-1

Crop Grown: BLUESTEM (GRAZING OR HAY)

#### **Soil Analysis Report**

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown:		I (GRAZ		AY)								
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.		
pH (**)		(5.8)	, <u>"</u>	Mod. Alk	aline 🧷	, ~	, Mar	, A.	~	ار مار سار الله الله الله الله الله الله الله ال		- 5
Conductivity	313	(-)	umho/cm	None		***** **	CL			Fer	tilizer Recor	nmended
Nitrate-N			ppm						*		30 lbs N/acr	ė, į,
Phosphorus	6	(50)	ppm	11111111111			j				45 lbs P2O5	5/acre
Potassium	161	(125)	<sub>Հ,**</sub> ppm ˜							3,44	್ಷ್ 0 lbs K20/a	icre 🧳 🎺 🥍 🔭
Calcium	4,226	(180)	ppm						ı.	). <u>(</u>	0 lbs Ca/ad	ف ف بام
Magnesium <b>4</b>	, 86 <sub>-</sub>		ppm							سوم رست ر	ំ <b>0</b> lbs Mg/ad	cre 🤾 🕺
Sulfur	68	(13)	ppm					ıiinnii	 **	s* , ^16~	0 lbs S/acr	e
Sodium	210	· · · (-)	ppm	* dominini	i i rrii i i i i i i i i i i i i i i i	, S	- i	· · ·	Jan Jan	500		' * '\$ "
Iron	s 70% c.~	**1_#.".			x" :	~ .	į Žyl		~ ,	y (720 y	_ ^s^	
Zinc'	* \$\footnote{\chi_{\text{\tin}\text{\tint{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tin\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tin}\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tex{\tex			1 4/15	~ ***		·	ž	***	-2.2		
Manganese	in s	,	» is	:	~ <sub>{</sub> .	•,		· , · .	b ,, ,	n . I.	. A 325°	
Copper		.' \	A 3 40	T	7" i.	. * 1	·	. '*	ž. ,	« v )		
Boron Limestone Requiremen	4.		~ 8 4 ^ _	aria.	, ~t~#	.#~	_ 1			_146	å:00	-,,, °
Limestone Requiremen	<b>L</b> , ,,,,, ,			× ~	×8″ v^	15° 1 71°	^	3	23,47,4	^m_~	0.00 tons 100	ECCE/acre
,				Dotaile	nile2 h	iĥ. To	et (95	hurata.	Dacte	Extract	7 28	n i markiya
,	`			nla la	-	ı.r	ະລະ (ວິຜ໌	ini aic	ىيچە ، پ 9.6	. ,	•	a
				70700000000000000 /V	nducti	vitv	Mer Lines	was San		, 3 mmhos/	cm -	
	*			× 200,40000.50	dium	reittie	%\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	- * * * * * * * * * * * * * * * * * * *		ppm	<b>M</b> . 46.73 *3	3.155 meg/L
		*	,		tassiur	ń	· January	# <b>*</b>	VA 249 a	ppm .	"AN TAT	0.334 meq/L
,				5447	lcium	2000000		· max.v		ppm		0.213 meq/L
, , , , , , , , , , , , , , , , , , , ,	,		,	Ma	ignesiu	m 💞	emer (* ) Galdh	88 - 8 - 8 - 8 - 8 - 8 - 8 - 8 - 8 - 8		ppm	MY 19,190 V 60M	0.706 meg/L
ĺ ,	`			- 267233000000000000	\R	5.86au - 2	7-7/2000	". S. Mach.	1.3		Mr v an Mille V and	AND THE
,	`			SS	PA.	: , , , , , , , , , , ,	h (na)	i.i.	21.90			70 (. 95.

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Nitrogen Apply an additional 30 lbs/A of nitrogen pnor to each four to six week graze down



out of state County

Laboratory Number: 231271 Customer Sample ID: SSB1 1-2

#### **Soil Analysis Report**

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown	: BLUESTEM (	GRAZING OR H	IAY)					
Analysis	Results	CL* Units	ExLow VL	ow Low	Mod High	VHigh E	xcess.	
pH ** *****	7.8	(5,8)	Mod. Alkalin	9 4 .		F.		. 2.75
Conductivity	454	(-) umho/cm	None		CL*		Fertilizer R	ecommended
Nitrate-N	0,	(-) ppm		ki ' 🚜	·		<b>35</b> lbs l	√ V/acre
Phosphorus	<b>.</b> 3	(50) ppm	pinn		1		<b>50</b> lbs	P2O5/acre
Potassium 🛴 🛴	126 (	125) ppm 3	્રું સાલુવાના મુખ્ય			":. <sub>3</sub> ,	🏥 🔭 🐧 lbs/	K20/acre
Calcium	***	180) ppm					/ v	Ca/acre
Magnesium	W V W	(50) ppm 🧓	,					Mg/acre
Sulfur	55	(13) ppm			immiri dinimir	_	0 lbs	S/acre
Sodium	. 322	", (-) ppm -		mnimmer?;:-		e j T	30, 00	
Iron	* *** *		3 %	e rugs .	,	1.4	~~ · · · · · · · · · · · · · · · · · ·	200
Zinç * * -		): ^^ ^			Ž		id, , 4 🔻	
Manganese	·	> \$_					, " , a ,	\$. 5 *
Côpper - 🎺 ` 🚓 - 🚉	and the second	. sistem is a		, : ' :		, , • 📆 *		
Boron	د هي د د د د د د د د د د د د د د د د د د		v v v	* %		£.a	** 0.00°	Name o o é difference di management
Limestone Requireme	ent , 👯	****	. 48 847 %			tř <u></u>	0.00 tons	100ECCÉ/acre
. ,		, ,	Policion	alinity To	čť ľSaturat	nd Basto I	Extract)	
< / /	,		Hq	amincy 15	อเ <i>ไว้</i> จีตเกเจ้ก	وu <u>جوجوب</u> 7.1	EXII acty	
			98795 A 16 44694	uctivity			mmhos/cm	
			Sodiu	A 39 WW 97 - 300	Win - Willer	146	n	6.351 meg/L
/ <u>(</u> ,)				sium 🧗 🔏	140/ JEEN	14	300000 4 200000 CO 5 2000	0.364 meq/L
		*	Calciu		4 %##C	224		11.185 meq/L
× ->				esium		9		0.699 meg/L
			SAR	n ni nite (allin " " " " " " " " " " " " " " " " " " "	Middle - "L. "Malila	2.61		27.77.7.
, ,		× .	SSP	gen j		×34.15		

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down



out of state County

Laboratory Number: 231272 Customer Sample ID: SSB1 2-3

Crop Grown: BLUESTEM (GRAZING OR HAY)

#### Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007

Area Represented: 1 acres

No.   No.	Crop Grown: B		•		n1)							
Conductivity	Analysis			Units			w Mod	High	VHigh	Excess		
	рН 🦬 , * * * * * * * * * * * * * * * * * *	~	: <sub>-</sub> (5.8)	100 L. 1	' Mod. Álk	aline	~ 'y, _ '	,	. ***	/30	A 44.00 1 3 3 3 4	
Phosphorus	Conductivity		(-)	umho/cm		,		CL*		Fe	rtilizer Recommended	
Phosphorus	Nitrate-N	`≈ -≾ं` <b>2</b> `	, .( <del>-</del> )	ppm p	, kalari					· · · ,	35 lbs N/acre	7 ()
Calcium   3,702 (180)   ppm	Phosphorus	8	,								45 lbs P2O5/acre	
Calcium   3,702 (180)   ppm	Potassium		∠(12̇̃5)̇̃	ppm **					e si della		0 lbs K20/acre	34.2
Sodium	Calcium		(180)	ppm	•						0 lbs Ca/acre	
Sodium	Magnesium 🥏 💆	149	(50)	ppm					San Take	J 4	0 lbs Mg/acre	ž.
Ton Zinc Manganese Copper Soron Limestone Requirement   Detailed Salinity Test (Saturated Paste Extract) pH 6.9 Conductivity 17:02 mmhos/cm Sodium 2039 ppm 88.720 meg/L Potassium 49 ppm 1.248 meg/L Calcium 1346 ppm 67.156 meg/L Magnesium 86 ppm 7:092 meg/L SAR 14.56	Sulfur					neninineteinen	ENITE EFERENCE	iipinniiii	ÎIIII		0 lbs S/acre	
Anganese Copper Boron Imestone Requirement  Detailed Salinity Test (Saturated Paste Extract) pH 6.9 Conductivity 17:02 mmhos/cm Sodium 2039 ppm 88.720 meg/L Potassium 49 ppm 1:248 meg/L Calcium 1346 ppm 67.156 meg/L Magnesium 86 ppm 7:092 meg/L SAR 14.56	Sodium , 'S	1,790	(-)	ppm		iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	mijimm		·	- £		
Detailed Salinity Test (Saturated Paste Extract)   pH   6.9   Conductivity   17/02 mmhos/cm   Sodium   2039 ppm   88.720 meq/L   Calcium   1346 ppm   67.156 meq/L   SAR   14.56	lron	n mm .		2.2 Y X V	· :-		** ** *	į				
Detailed Salinity Test (Saturated Paste Extract)   pH   6.9   Conductivity   17:02 mmhos/cm   Sodium   2039 ppm   88.720 meq/L   Potassium   49 ppm   1:248 meq/L   Calcium   1346 ppm   67.156 meq/L   SAR   14.56	Zinc ** * _ ;		2- 28		i. i	¥. × °.		1,	` . / .	· :		. %
Detailed Salinity Test (Saturated Paste Extract)   pH   6.9   Conductivity   17.02 mmhos/cm   Sodium   20.39 ppm   88.720 meq/L   Potassium   49 ppm   1.248 meq/L   Calcium   1346 ppm   67.156 meq/L   SAR   14.56	Manganese	, s	200	'_ ~a	,; · · · i	√· Q*	** : 24	 	· >~:	25. C. 4.		, > ,,
Detailed Salinity Test (Saturated Paste Extract)  pH 6.9  Conductivity 17:02 mmhos/cm  Sodium 2039 ppm 88.720 meq/L  Potassium 49 ppm 1:248 meq/L  Calcium 1346 ppm 67.156 meq/L  Magnesium 86 ppm 7:092 meq/L  SAR 14.56		٠	#7. T		•	2 A S & P.	. 8.		الميار المارات	,*		, 8
pH       6.9         Conductivity       17/02 mmhos/cm         Sodium       2039 ppm       88.720 meq/L         Potassium       49 ppm       1.248 meq/L         Calcium       1346 ppm       67.156 meq/L         Magnesium       86 ppm       7:092 meq/L         SAR       14.56	Limestone Requirement	~xe?* ~ .j.lj"	No 1 to	· Comba S	ŭ-7°	L. m.	" š.,			è :: ,	0.00 tons 100ECCE/acre	. ^ ^ . %2` # ^
pH       6.9         Conductivity       17/02 mmhos/cm         Sodium       2039 ppm       88.720 meq/L         Potassium       49 ppm       1.248 meq/L         Calcium       1346 ppm       67.156 meq/L         Magnesium       86 ppm       7:092 meq/L         SAR       14.56	<del>-</del> ····································	,			Defeile	d Colinia	. Taka 16		2 D. 242	÷		
Conductivity         17:02 mmhos/cm           Sodium         2039 ppm         88.720 meq/L           Potassium         49 ppm         1:248 meg/L           Calcium         1346 ppm         67.156 meq/L           Magnesium         86 ppm         7:092 meq/L           SAR         14.56	*	, ,		· ·			r lest (c	oaju <u>i</u> alė				
Sodium   2039 ppm   88.720 meq/L		,		4	Pri	nductivii	v				/cm	الآرمنين
Potassium 49 ppm 1.248 meg/L  Calcium 1346 ppm 67.156 meg/L  Magnesium 86 ppm 7:092 meg/L  SAR 14.56							J. 1888.7.7.	(				.∜ ″ α/I
Calcium 1346 ppm 67.156 meq/L  Magnesium 86 ppm 7:092 meq/L  SAR 14.56	, , , , , ,											•
Magnesium 86 ppm 7:092 meq/L SAR 14.56	<b>,</b>				Ca	lcium						
SAR 14.56					ĵ. Ma	ignesium						· w
SSP 54.03					SA	R			14.56			~ .**
	· · · · · · · · · · · · · · · · · · ·		, 40	•	SS	P	1444.		54.03	1300		

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water. Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down...



out of state County

Laboratory Number: 231273 Customer Sample ID: SSB1 3-4

#### Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 2/4/2008 Area Represented: 1 acres

Crop Grown: BL Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.		
	₹ 7.7	(5.8)	, , , <del>, ,</del> , , ,	ું Mod. Al	kaline		*4. v.v.			14 27.	* * *	***
Conductivity	2,850	· (-)	umho/cm	-		ž . 4	C	 L*			tilizer Recomn	nended
Nitrate-Ñ		v(-) :	ppm	11		~		• • • :	* * *	%- W	30 lbs N/acre	
Phosphorus	3	(50)	ppm	HHÌH	• 37-1 %	• * .	. 53,	:	1 "	• " "	50 lbs P2O5/a	cre
Potassium Alika	×3193		ppm	1		HHÍÍÍHH		Šir^^ :			0 lbs K20/acr	e × ***
Calcium	4,506	(180)	ppm		[1116][118]					, ,	0 lbs Ca/acre	
Magnesium	186	્રે (50)	. ppm	i ininin		Ų		kun :		*	0 lbs Mg/acre	, 7 L
Sulfur	47	(13)	ppm					)11111111111 <u>.</u>	( Nin ~	: ,	0 lbs S/acre	*
Sodium	2,920	(-)	ppm					Hjunilia		· 42	,	2.
iron	~ -)	,		• * *	(-	***	^,	]		wn"	~ ~	, ^
Zinc 📜 🗀 😤			1 - 2	I':KI HY.	: ` `, `	* * * * * * * * * * * * * * * * * * * *	., , , , , , ,	3	37 ga*			- 1 - 1
Manganese				•				1	, ,		• • •	# **A
Copper	( 2 ; )	, ,	4 . 3	i Ra		.^ ,		مُنْ الله الله الله الله الله الله الله الل	25.00	· ar		* , , ,
Boron								l ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` `				
Limestone Requirement	· · · · ·	, (* %		in the		2,7 ,7 m	y s. ^	300	- J		<b>).00</b> tổns 100EC	CE/acre
			,	Detail	ed Sali	nity T	est (Sa	turate	d Paste	Extract		
				pl	Н				7.			
3 ×				C	onduc	livity	37 h		0.7	7 mmhos/	cm	
				S	odium				8	9 ppm		.873 meq/L
	×	` `			otassii	ım	· '&	433	<u>∕</u> ′∴2	1 ppm	0.	537 meq/L
					alcium				6	2 ppm		.094 meq/L
	x			M	agnesi	ium				7 ppm	0.	.575 meg/L
				S	AR				2.8	6		
<u></u>				# 1 TO SEE # 1 22 1	SP	~ . ``	17 Bridge Val.	4 .	/206-86	<b>4</b> .:	Line A State Company	483, 445 / A NA 1862

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down.



Tulsa, OK 74135

out of state County

Laboratory Number: 231274 Customer Sample ID: SSB1 4-5

#### Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX) Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 2/4/2008 Area Represented: 1 acres

Crop G	Grown: BLUESTEN	I (GRAZING	OR HAY)				
Analysis	Results	CL* U	nits ExLow	VLow Low	Mod High	VHigh Exce	ess
рН . 🦭 🏌 , 🔭	/ c_iii 8:3	(5.8)	- Mod. Alk	aline جي ِر الله	, ×, ,,	, , ,	
Conductivity	5,270	(-) uml	no/cm V. High		CL*		Fertilizer Recommended
Nitrate-N	9	(-), ", p	pm illilli			1,4,	20 lbs N/acre
Phosphorus	0	(50) p	pm		<u> </u>		<b>55</b> lbs P2O5/acre
Potassium	, <u>112</u>	ւ (125) <sub>։ Հա</sub> ւ թ	bwî*****IIIIÎÎÎIII			119 - 1	10 lbs K20/acre
Calcium	30,178					•	0 lbs Ca/acre
Magnesium 2	390	(50) p	bw 🧦 յույույի				0 lbs Mg/acre
Sulfur	136	(13) p		minnii)			0 lbs S/acre
Sodium	6,677	(-) p	bw 🧃 📶 📶	itii muuluud	ininiiii <b>i</b> liitiniii	Mannaiž į,	
Iron	Y non a Y notice y an					•	~
Zinc		*	1.3:1.45			· <5° \$	
Manganese	.8			20 . 4 85 20 m . 24		•	
Copper		*	, i		1.1	• • • • • • • • • • • • • • • • • • • •	
Boron	* * * *			1. S. S. S. W.	, <b>.</b>	, <del>-</del>	
Limestone Requ	irement (	· * . * * * * * * * * * * * * * * * * *	Bar Al			- 4t-	0.00 tons 100ECCE/acre
				Committee and another the wo	^~ _ ^ }@ \$527@~~~ (	ay n n - myennaw	graph to some the firm of the statement of the
e 5	/			d Salinity Te	st (Saturate	,	ract)
			pH	0.0000000000000000000000000000000000000	n	7.2	
77 ( X				nductivity		<b>30.00</b> mn	1777 2777 277 277 277 277 277 277 277 27
	*			dium	. " hiller . e. ad Sin.	<b>5689</b> ppr	
				tassium			m 3.274 meq/L
		. >		lcium	440 <b>888.</b> **	<b>1629</b> ppr	
·	•		86 4 3 769 7 4 4	ignesium			m 14.879 meg/L
	<b>A</b>		SA		/ 10, v . v . W. W.	35.70	**************************************
	* * * * * * * * * * * * * * * * * * * *	*	r ÁSS	P		71.34	

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water. Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down



out of state County

Laboratory Number: 231275 Customer Sample ID: SSB2 0-1

#### Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown: B		GRAZING OR I	HAY)							,
Analysis .	•	CL* Units	ExLow	VLow Lov	w Mod	High	VHigh Ex	cess.		
pH****	8.2	(5.8)	Mod. Alk	aline 📑	· · · · · · · · · · · · · · · · · · ·	Code 3	7.1	', a	Charles 1	- <u> </u>
Conductivity	407	(-) umho/cm	None		c	L*		Fertiliz	er Recomn	nended
Nitrate-N	J. 24.2	(-) ppm	, 1 × k					. 35	lbs N/acre	X
Phosphorus	6	(50) ppm	IIIIIIIIII			! !		45	lbs P2O5/ac	cre
Potassium	328 (	125), ppm_	<i>ે</i> મામુંમાાં	ingagalitang	HOD HÖHLÜL	¢mini ~* ∗	*s.	<b></b>	lbs K20/acre	<b>9</b>
Calcium	4,743 (	180) ppm		amananiinii				0	lbs Ca/acre	, ,
Magnesium 🗼 🗼 🗼	135	(50) ppm	A	iiniiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii				* · · · · · · · · · · · · · · · · · · ·	lbs Mg/acre	
Sulfur	42	(13) ppm				<b>þ</b> innnin		0	lbs S/acre	
Sodium 🛴 💮	296	ີ້ (-) ppm	juniûnd	najagatian		<u>.</u>				
iron			typ to	see of all kinds		!		Park and		
Zinc			٠٠ المشار .			1. ·	- NI: ,			, .b. )
Manganese	. 4.00233 v.	,	- سد.	In units in F		1				
Copper 💝 🛴		· ' ·	· : \$4:		",			- P	- 19	
Boron	,	Va. 253 ₩			20% Y	! !	3.4	,		۸
Limestone Requirement	*		*	1.52	V.C.	, , , , ,	. : : : : : : : : : : : : : : : : : : :	0.00	tons 100EC	CE/acre
			_ *	·	2" "0000 " "	v. 33 × 49,000	00 6 .0.0 00000000	940°4 4 100000 °	*** *** *** ***	20°04 ( 3,000) ** + * * *
· ·		e		d Salinity	Test (Sa	aturated	Paste E	xtract)		
			pН		~ ^ 8 <i>8**/#</i>	- ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	7.6	cr * wicosawer	** .00 4880 J. 4 7085 3	a a anama sumuma da
· / /			Co	nductivity			₹ 1.33 n	mhos/cm		ie dr. 19
<b>.</b>				dium	1 1 to 1 to 1 1 1 1 1 1 1 1 1 1 1 1 1 1	·	<b>132</b> p			759 meq/L
		r		tassium	CH BAI			pm		338 meg/L
, ,			304,000 /77 .37000	lcium	." c5%	\$ \$\doldsymbol{\pi}_{\alpha} \cdot \	<b>108</b> p	* 50505C2*, 19000 Z		372 meq/L
			40000000 VA A/1000	ignesium	San		<b>5</b> p	pm 🦅	0.4	405 meg/L
•			SA	∖R ŠP` <sup>®</sup> ⊝∴ <sub>š</sub>	^~*~**	EX'SSAnce / ` `	3.39	300 May 2	and the state of resident	
*CL=Certical layel to the point to			<u>, 99</u>	)F (;;) §			48.50			

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down...



out of state County

Laboratory Number: 231276 Customer Sample ID: SSB2 1-2

Crop Grown: BLUESTEM (GRAZING OR HAY)

#### Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown: BLUESTEM (GRAZING OR)	nai)
Analysis Results CL* Units	ExLow VLow Low Mod High VHigh Excess.
рн (5.8) / с А	Mod. Alkaline
Conductivity 303 (-) umho/cm	
Nitrate-N ppm (	, , , , , , , , , , , , , , , , , , ,
Phosphorus 6 (50) ppm	45 lbs P2O5/acre
	ွှင့် ကြောမှုကြောက်မှုကြောက်မှုကြောက်မှုကြောက်မှုကို ကြောင်း ကြောင်းမှုကို ပြုပြုပြုပြုပြုပြုပြုပြုပြုပြုပြုပြုပြုပ
Calcium 3,382 (180) ppm	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
	and the state of t
Sulfur 49 (13) ppm	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
Sodium 2000 ppm ppm ppm	
iron	· · · · · · · · · · · · · · · · · · ·
Zinc	
Manganese	23.9
Copper (1) 1 (1) (1) (1) (1) (1) (1) (1) (1) (	
Boron	* 1 **
Limestone Requirement	0.00 tons 100ECCE/acre
	Detailed Salinity Test (Saturated Paste Extract)
	pH 7.9
	Conductivity 4.76 mmhos/cm
	<b>Sodium</b> 447 ppm 19.431 meq/L
	Potassium 49 ppm 1.250 meq/L
,	<b>Calcium</b> 1004 ppm 50.097 meq/L
· * · · · · · · · · · · · · · · · · · ·	Magnesium 41 ppm 3.337 meg/L
	SAR 3.76 SSP 26:22
	SSP 26.22

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down.



out of state County

Laboratory Number: 231277 Customer Sample ID: SSB2 2-3

#### Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown	n: BLUESTEN	I (GRAZ	ING OR H	AY)							
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess	
рН ., ′	<u> </u>	(5.8)		Mod. Alk	aline	Ţ.	, , ,	1,5" ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	·	1. 8	
Conductivity	889	(-)	umho/cm	Slight		~ 66.5	C	CL*		Ferti	ilizer Recommended
Nitrate-N	- <b>3</b>	(-)	ppm		,	, r	~ A.		5	٠ - (الْمُشَارِّةُ	30 lbs N/acre 🔩 🔌
Phosphorus	1	(50)	ppm	11	, .		• > . «			, a s	<b>50</b> lbs P2O5/acre
Potassium	16	(125)	🏥 🌁 ppm 🏥			, a. ,			22.35	: 7.1	100 lbs K20/acre
Calcium	591	(180)	ppm	111111111111			11[[]][]][]] .z.	MI 1. s		: : / *	0 lbs Ca/acre
Magnesium	, 9 <u>.</u> `	(50)	ppm		~ "		iç".		in in	: 53 <u>_</u>	15 lbs Mg/acre
Sulfur	4	(13)	ppm				*	<u>.</u>		·	15 lbs S/acre
Sodium 🗦 📜 🛴 🛴	36	f ( <del>.</del> ):	, ppm,	3 :111 iiii .	*. • :		:		See of P		
lron	r - 2-, 1 -			:**	····		:	I.	^ai`	.** 6. 2	nin value na 10 c
Zinc			3 , 3		3.% ~	: 3 2		1 2		i12	
Manganese			18,2%	. ~ <i>56</i> .	~~~×,q		: *	l g	. ,,		
Copper	ş.,	77.		:			•	1 "	: 🖫		i disti
Boron	,	33.8				* ' <	~ ****	, <b>!</b>			00 Î VOCEOCEÎ
Limestone Requireme	ent 🦠	** h.j.j.	,		. · ¥	* ,,		* , ~	ž. 1	* * ' U	.00 tons 100ECCE/acre
				Dotaili	نادع کی	nih. T			d Dact	e Extract)	
			`	pH		iiir <b>y</b>	Ësr (3	atujaje	u.r.ası 7.		
				A 0000A 707000 W. A. Yo.	nduct	ivity				<b>8</b> mmhos/c	m
				20000/ v 5	dium	a v icy	× 200			5 ppm	12.830 me
٠	*				tassiu	ım .				4 ppm	
	`				lcium		IW 46	rwe îsa		<b>0</b> bbw -4 66m ≦	35.932 me
				M:	gnesi	um'			F : 72	1 ppm	
, *					\R		8/2 -1.20	357 × .4320	2.9		
			*, *				V., 17	San Maria		2	

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre. Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur



out of state County

Laboratory Number: 231278 Customer Sample ID: SSB2 3-4

Crop Grown: BLUESTEM (GRAZING OR HAY)

#### Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown: E	BLUESTEM (GRA	AZING OR HAY	)			
Analysis	Results CL*	Units i	ExLow VLow			xcess.
pH	<b>7.7' (5.8</b>	)	lod. Alkaline	173	· 4.3	
Conductivity	840 (-	) umho/cm S	light	CL*		Fertilizer Recommended
Nitrate-N	**************************************	). ppm ili			~	20 lbs N/acre
Phosphorus	<b>13</b> (50		(1888) (1888) (1888) (1888) (1888) (1888) (1888) (1888) (1888) (1888) (1888) (1888)	l		<b>40</b> lbs P2O5/acre
Potassium	্ <sup>ু</sup> 1 <b>5</b> 1 - (125	) ppm 🏥 🎚		Mintiponerina .		0 lbs K20/acre
Calcium	<b>2,508</b> (180		111111111		, , ,	0 lbs Ca/acre
Magnesium	<b>72</b> (50	) ppm [l	namigirimijilitii	nuitanungg¢:		0 lbs Mg/acre
Sulfur	<b>962</b> (13					0 lbs S/acre
Sodium	452 (-	)	<u>nggaanjaarinasii</u> (o	વાલાવું છે 🧻 🏸 🚼		
Iron	* A. W. **		Z 1 0 0		· · · · · ·	TW. 0
Žinc* , , , , , , , , , , , , , , , , , , ,		~ · · · · · · · · · · · · · · · · · · ·		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Manganese	, ,		, 5.5		, ,	3.6.36
Copper		`	, s, ° · T		.:- 1	
Boron		,	A	ļ		
Limestone Requirement	<u>, sa 1840'a y 19</u>	* ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '		5 - 2 - 2 - 2 - 2	, m ;	• • • 0.00 tons 100ECCE/acre
		3_ <u>~</u>	· · · · · · · · · · · · · · · · · · ·	spramer v aa, a, ,	ANNE TO THE RESERVE TO THE SECOND TO THE SEC	
<b>\</b> ,	*	,C		ity Test (Satu	rated Paste E	xtract)
1	•	* -	pН		7.5	- 0.00000000000000000000000000000000000
` ` ` ` `		₽,		/ity	12.76	
		£*.	Sodium	14-8790 <b>638</b> . 14.8	1394	opm <b>60.680</b> meq/L
·			Potassiun	n		0.926 meq/L
<b>i</b>		<b>\$</b>	Calcium	<b>11</b>	ا 913	opm 45.542 meq/L
· ·	,	*,	Magnesiu			opm 3.888 meg/L
			SAR SSP∷	3369 764 T 17	12.21	
		/ / 🔻 📆	SOF MAN		<u>,                                    </u>	7

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Nitrogen Apply an additional 30 lbs/A of nitrogen pnor to each four to six week graze down.



out of state County

**Laboratory Number: 231280** Customer Sample ID: SSB2 4-5

#### **Soil Analysis Report**

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007

Area Represented: 1 acres

Crop Grown: E	BLUESTEN	i (GRAZ	ING OR HA	AY)								
Analysis	Results	CL*	Units	ExLow	VLow L	ow Mod	High	VHigh E	xcess.			
pH 🤼 🛵 🖟 🗼	8.0	(5.8)		Mod. Alk	aline	· 2011		, ,	<b>.</b> .	40° 2 22'	,, × , <u>*</u> , * ,	
Conductivity	2,820	(-)	umho/cm	V. High			CL*	*	Ferti	lizer Reco	ommende	d
Nitrate-N	60	(·)	🌲 ppm 🖳		annun (m)	ĠijĠĦĦĦ	nijani 📑		3	0 lbs N/a	cre	\$ J
Phosphorus	3	(50)	ppm	HIIII			1			<b>50</b> lbs P20	05/acre	
Potassium	, <b>161</b> ,	(125)	ppm	- Minimin	uiniuitțiiu	i in	niķi 👉 🧎	7		0 lbs K20	)/acre	1.7
Calcium	24,179	(180)	ppm							0 lbs Ca/		~
Magnesium 🚉 🛴 🚉	196	(50)	ppm 🥞		ijįįįįįįini		m <b>o</b> na	1 14.		0 lbs Mg/	acre	, , ,
Sulfur	195	(13)	ppm							0 lbs S/a	cre	
Sodium . * * * * * * * * * * * * * * * * * *	2,269	(-)	ppm		ingus <u>usu</u> ndinu		minniffit.	132		· , ""		, ,
Iron	^. 5 ^ ~ ×	184 ****	. *				1	رس ر	. ~~		_ ^03 * *****	
Zinc		~ -			18- F & '			4. T				in the
Manganese		2 4 5	_ ~		~ .		1 *	٠	* r	2.2.4.4	, , ,	
Copper		~ ×****.	·	:. 41°.	* - '	:		:	- 3			
Boron	gt war killer		*	çı •		•	i		هدر کاری این	- h-	į <sub>16</sub> , , ,	, , /~
Limestone Requirement	-	* *	, i s, '	<u>, 2</u> 2	( nm to 10	<u>)</u> 27 44.	, s.,	- 7,30 ,		00 tons 10	0ECCE/acr	re 🥍 🦠
				2000000	erren spræmmer.	~ ~~ ~.	<u>.</u> <i>, y</i>		mr 20188 - 11 12	~ ^Z5Z\\$Z\$\\Z\\$\	5 ****** ** \$500.000	0.000 AV
,		*				y lest (	Saturate	d Paste I	extract)		użi.	137
				pH Co			Section coans	7.6		: 2279928K, 1738W1 -		w x z
	*,		,		nductivi	ty 🦠 🐪 🐪			mmhos/cr	n:	0.400	
		,			dium tassium		d. *		opm	-2.38375	2.123 m	
* *	*	*		4 mm 1/201/5	tassium Icium	-600.2	. · · · · · · · · · · · · · · · · · · ·	8			<b>0.198</b> m	w www. ww
, , ,		*	, ,		icium ignesiun	a	Hwys <b>47</b> 0	46 ∴ ે3્	opm	. Zakata	2.292 m	0001 00007 /00
				SA			1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	 1.88	hhùi 🚟 🏸		0.251 m	ed/r
,			2, , ,			· · · · · · · · · · · · · · · · · · ·	ego :	43.66	- 20	r (1724) 188	910 <b>8</b> 213 Tab	. Y 354
*CI =Critical level is the point	المماميطير	** *********	italiant (avalu								1 1977 L. S.A.	

<sup>&#</sup>x27;CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down...



out of state County

Laboratory Number: 231281 Customer Sample ID: SSB3 0-1

# Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX) Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Growi	n: BLUESTEM (	GRAZING	G OR H	AY)									
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess			
pH ^ ` @#\\\	8.6	(5.8)	-,	Mod. Alk	aline		2 711		. /3	*		1 ~22 %	, £ 3, 2
Conductivity	90	(-) ur	nho/cm	None			CL	•		Fe	rtilizer F		
Nitrate-N	is	ž (-) ;	ppm	· !		~ · · ·	," " "		ł <sub>o</sub> .	* * * * * * * * * * * * * * * * * * *	<b>35</b> lbs	N/acre	4 - T
Phosphorus	, <b>3</b>	(50)	ppm	IIIII	t		į	X Yaman -				P205/ac	
Potassium	128 🕻 (		bốù 🖫	jiimiinij							0 lbs	K20/acre	
Calcium			ppm						<i>,</i> , .			Ca/acre	90
Magnesium	100		bbm -	£ minning					, , ,,,		O lbs		, r
Sulfur	17	(13)	ppm	900000			111111111111111111111111111111111111111	~, <i>~</i> , <i>^</i>		78.28****	0 lbs	S/acre	
Sodium	, 236 <sub></sub>	· } ;(-)	ppm , ,	ં <sup>36</sup> .1000	mimmi	III . :	·****:	~~~ · · · · · · · · · · · · · · · · · ·	a, , ,	12h	, ~, ~~		ģ
Iron	\$5. 9	~ ~ ~ .			٠,٠	:	İ	·.^ .	- <u></u>	عر		eggy 7	
Žinc,		, .	2 1 1 1	:	**		~ 'i		4.5:		, 7		4.7
Manganese	4	hangin Jarah			·		6	٠,			,		, % (f),
Copper A.C.	e a militar a militar	n#1	Ŕ	to the state of	, ~4, 1	, 4	F I	*,*	, , , , ,	,	. " "	â.	
Boron Limestone Requireme	ant i i i i i i i i i i i i i i i i i i i	77.	, ,		^ '8 <u>'</u>		l Š	n *	35	1	0.00.55	100EC	 CE/acre⊶
Linestone Requireme	511 <b>6</b>	<u></u>		ab** £	*	3 * 0	.96				<b>0.00</b> 3.001	IS TOUCO	CE/acre-
				Detaile	d Salir	ity Te	ššt (Sa	turated	Paste	Extrac	+1		r
`				pH			.43 (47 <u>7</u>		بروير .ر. 8.3	V W/4 /	<b>7</b> : XX	1. 1. 12. 1	v 86,707890
*** /				ى م⊼مىم ∨	nducti	vitv	33,5740		35732	mmhos	/cm	1996	
					dium	: 2.392	KK" - •:	ti de la constantia	. 30 Feb 60 F	ppm	<b>,</b>	2.3	270 meg/
*					tassiu	m 🚟		4898		ppm	11/17/20	A/A	389 meg/
"					lcium	ator * 3	and the	· * (39%		) ppm	` "SBAGA		110 meq/
,			57		ignesii	im 🦪				ppm		w v.	)33 meq/
				SA		at 1988	X	ulia val St. 1 Ava <sup>286</sup>	0.77		- * **********************************	on case Visibility	« i Tu
	<u> </u>		-	_∂;;jî`SS	P				11.29				ro:

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.



out of state County

Laboratory Number: 231282 Customer Sample ID: SSB3 1-2

## Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007

Area Represented: 1 acres

Crop Grown: E		•		AY)										
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.				
pH The Service of the	. 8.6	(5.8)	, <b>-</b>	Mod. All	caline .	*	* * * * * * * * * * * * * * * * * * *	/ " # .		5.		* ~ .		
Conductivity	125	(-)	umho/cm	None			CL*			Fei		Recom		t
Nitrate-N 22	, . <sub></sub> ,3.	<sub></sub> (-)	ppm	31 7		·	** **		* .,	200	<b>30</b> lbs	N/acre		7-2
Phosphorus	3	(50)	ppm	IIIIIII							<b>50</b> lbs	P2O5/a	cre	
Potassium	162	(125)	ppm	ĨŅŨIIŪII	miiiiitta	tiinniiji	HÜÜHÜĞ	Ĭ	* >0		ຶ່ 0 ີ lbs	K20/acı	e -	2°00
Calcium	5,725	(180)	ppm		1111111111111111						0 lbs	Ca/acre		
Magnesium	118	(50)	ppm		Minimi	unimai		(I)		,	0 lbs	Mg/acre	• 1	
Sulfur	20	(13)	ppm					11 .			<b>0</b> lbs	S/acre		
Sodium	305	્રિક કે <b>(-)</b> ,ે	, ppm		ajajajaja	mi 🦫			~		, f		,:	, ~
Iron		,					, i					ν.		
Zinc Zinc Zinc Zinc Zinc Zinc Zinc Zinc		~ ,**	및 PA			:	1. 1.	. Ş.J.:	ž	:	-2, 1 , ~ , s		A	. r.ā.ii
Manganese	, ,			* * * * *	. 6		 	~ 4.			449			, ,
Copper	.,	1 3		3	î . · .	, <i>, ,</i> , , , , , , , , , , , , , , , ,		70	~~ ~ / t					
Boron	» ۲.پير ۷				^	ےدیے ہے۔				) has refer	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	n		
Limestone Requirement		24 2	,^ ~ *		, with	Mr T	, %	,	. £'3		0.00 to	ns 100EC	CE/acre	Э
				Descri	ما الأحالات	ia Ta	at /8 a	zarr aw	- ''' '''' '''''	e Extrac			~	B.T.Z.S.
	` '	•				ity, i.e.	şı (əai	lurale	*** ***		9k - 1988			r im.
				pł C	n onductiv		Mi mo.		.8 	o O mmhos		ar) digitar	om zama vi	~; ~
,				200,44 6, 78 9000,0	zijuucuv odium	rity <sub>s</sub> ,	Še odklina				CIII	in and it	206	168. j.   4
				SC D	otassiun	24/37/	- 78L /480 -	oği v	ت وُنَہ شدہ	3 ppm	\$# <b>#</b> ###		.286 me .570 me	
•					alcium	11	AL (A)	37.77	1. 11.11 BZ 4.5	2 ppm		2000000 A 100000000 3 100	AN	W- 1/W /W
<i>.</i> *					agnesiů			7 277		6 ppm	ş ,		.802 me	
`								e Rie	1.0	7 ppm	. kaz	2. · s.u · .J.	.412 me	÷4/,⊾>́
,					AR SP	1, 13%	árall. M	T	1.0 18.9		n Salata		THE W	a. y
				And and of Contraction	21 ( 74% %	. 313	and T	rz .	10.5	J. C. 25 . 19,59	v Allender 2	N 14 17 1	Mail W.	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.



out of state County

Laboratory Number: 231283 Customer Sample ID: SSB3 2-3

Crop Grown: BLUESTEM (GRAZING OR HAY)

### Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown: B				AT)									
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.			
pH 😭 🚉 🐰 🔭 🐧 🛴	8.8	(5.8)	·	Strongly	Alkalin	6 <sub>4</sub> "	* ***	* "	~	199	200	أست	, ; <u>;</u> ,
Conductivity	270	(-)	umho/cm	None		- ~~	CF.	•			rtilizer F	lecomm	ended
Nitrate-N	. 14	( <b>-)</b> ,	ຼຸ່ ppm 🦈	, inimanij		•	,i - ", <u>:</u>	.,* . * :	3" U" ~		10 lbs	N/acre	, s ^ ~ ~ ~ ~
Phosphorus	2	(50)	ppm				, i					P2O5/ac	
Potassium			jepm 🕏						, ,	1. 1. 2.	0 lbs	K20/acre	, k *
Calcium	17,196	(180)	ppm				iiiiiiiiiiiiii					Ca/acre	
Magnesium -	142		ppm							: " , , ,	0 lbs	Mg/acre	
Sulfur		(13)	ppm				nganiggad			~ Yye <u>.</u>	0 lbs	S/acre	*** ** ** **
Sodium	558	˝(-)	bĎ	jamini			<i>!!!!!,</i> ^ ;	3 7 :	1,	*##***********************************	`££		
Iron		0.00	T, gra	<i>"</i>			i	* •	~~%	•			25.00
<b>Žiņi</b> c				200	a	: da.		~.~ <sup>%</sup> ~	**		. 😽 🚉 🚉		- 1 · 1 · 1 · 1
Manganese			> % }	s. < < 4	4	• •	1 1 % t		2. 32	a. ·			h 100 h
Copper		~a :	3 h 3 n * 3 r 4					<i>~</i> ,:			-	£ 7	, 250. 
Boron	,				Z. s			- ^C.				٠ - ا	~ 3x ~ _ eg g
Limestone Requirement	I % - 3 - 5 - 5 - 5		· · · · · · · · · · · · · · · · · · ·	s Spigg	·	·	****	_ 10° 50° 5	», ∰ ", w " "		0.00 ton	s_100EC0	CE/acre
				" <del>5</del> "	s, program	~*3" /	_ ~~~~	. : 2003	,	20 <u>11</u> 200	1.00 TOSKIN.	. Marie	2 7788 - 7788 - 578
, ,	',					nity	i est (Sa	turated	************	. "	:t)	~	
				pH			yvalei e	Sin Main' .	8. <i>* 200</i>	•		3 Ogran	near lan magazinen h
`									1,2			P 1 W/	
					dium			. 3 W. 7	16 *******	0 ppm	(a % Z*** ***		74 meq/L
*					tassiu		with M	1350 N					78 meg/L
· v					lcium		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	. 4 3861	4	8 ppm	w. 200	2.3	99 meq/L
						um»	M.I.S.	i Opi. Silokolis, 1971			gran way, , s		<b>86</b> meq/L
				-	\R :p ····			3 % . * *	6.1 -€71 €			energiaga, , "	San
× · v	*	2	Q.	<u> </u>	)F,,-/(%)	Caragoni's	dik i ii	The Me	~ 4 J . 6	9 <sub>7, 49</sub> , 3, 3,	100 m 344 m	pas zii (""."	Contract Contract

<sup>\*</sup>CL=Cntrcal level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.



out of state County

Laboratory Number: 231284 Customer Sample ID: SSB3 3-4

Crop Grown: BLUESTEM (GRAZING OR HAY)

#### Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Analysis	Results	CL* Units	•	VLow Low	Mod High	VHigh Exc	ess.
the two the transfer of the tr	. 8.7	(5:8)	Strongly A	lkaline	·	· ,	
Conductivity	768	(-) umho/c			CL*		Fertilizer Recommended
onductivity Nitrate-N	46	(-) ppm	ing and the second	majpanin	hunning 🖫 🛴		0 lbs N/acre
Phosphorus	0	(50) ppm			i		55 lbs P2O5/acre
Potašsium	86	(125) 🖔 p̃pm	ું <b>ા</b> માંમાંમાં	miintanimm	m, 44.5		્ર ેુ. <b>35</b> lbs K20/acre ૂ ૣ <sub>ૢૢૺ</sub> ્રાફ્સ
Calcium		(180) ppm			IIIIIIIII MIKIIIIII	(II	0 lbs Ca/acre
Magnesium 🖟 🛒 🐇 🛒	192		.,	Municipani	interiori de cont	: · ^* * _~ : ,	0 lbs Mg/acre
Sulfur	134	(13) ppm	<b></b>		300001000 <b>;</b>	ELITATI	0 lbs S/acre
Sodium	<b>1,216</b>	(-) ppm		ıtığıı(iiiinni)	giilinnii 🏥 🕍	: W	
lron .	. ~	ب بری	nýmgone +	" "%::	. , <u></u>		www.aggings.sum.up.r.
Zinc <sub>i</sub>		i water	~ (\$ <del>.</del>			:	
Manganese	4	, «, »	·	,	1 . **** - 1	. 1,~	~ * * *
Copper *** , , ; *** , , ; ****	* * * * * * * * * * * * * * * * * * *	·	in the second	· · · · · · · · · · · · · · · · · · ·		: «Xe ma	
Boron	, ×,	*,		• • , *		gv hasanas .	~
Limestone Requirement		* * *	~~~ <u>~~</u>	*,		s single	0.00 tons 100ECCE/acre
· · · · · · · · · · · · · · · · · · ·			D-24-11-4		_1476148148		tract)
,	,		petalled	Salinity	est (Saturate		wact)
				dustivity	riv Kriskalam.	8.4	mhos/cm
***				uucuvity :	-1	3.09 MI	70 445
× /			30u Bot	iuiii Soolum		402 pp	m 20.115 meq/L
	,	•	Calc	issiųm issiųm	1 742 1 m 1 1 1 1 1		
			Carc Mac	nocium		92 pp	m 4.605 meq/L 0.385 meq/L
,			SAF		Side a service and a service a	12.74	All Single State of the Control of t
, v		2.1			(400) 1 ( \$ 2 ( 5 2 )		

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.



out of state County

Laboratory Number: 231285 Customer Sample ID: SSB3 4-5

Crop Grown: BLUESTEM (GRAZING OR HAY)

### Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Analysis	op Grown. BLC	Results	CL*	Units	ExLow	VLow Low	/ Mod	High	VHigh	Excess.			
pH ·	3	8.9	£(5 <u>.</u> 8).	i and a significant	Strongly	Alkaline	* * * * ¢_s		J.	* .	~, ^ _	** **	, est
Conductivity		853	(-)	umho/cm	Slight			L•		Fert	ilizer Rec	ommend	ed
Nitrate-N		65	( <del>-</del> ).	ppm	×:0000000	ninaininina	lî ÎN ÎN ANTÎNÎ P		~ ~ ·		0 lbs N/a	acre	
Phosphorus		1	(50)	ppm	Í.			, I			55 lbs P2	O5/acre	
Potassium		237	(125)	ppm		ittiimmi(termi)			1/0% - 1/2		0 lbs K2	0/acre	x *
Calcium		24,982	(180)	ppm							0 lbs Ca		
Magnesium		229	(50)	ppm	• :	niniiiiiinini	~20~ •	್ ಸಿಸ್ ಒ∗	_ :	Y lik	0 lbs Mg	/acre	بر چير ا
Sulfur		156	(13)	ppm					1111111		0 lbs S/a	acre	
Sodium		1,884	~~ _(-)	ppm	; <b>)</b>	iidaniii)iidani	anjaininini	<b>J</b> IIII	´	2, 1			
iron			0 M Y MW	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		masa a			·	* ^, ^,	m g	yma a "as as as	
Zinc 🐪 🗼	` , ` . `	~ .* .*	* R ~	THE DESTRUCTION OF SERVICE SERVICES	m Lina !	· · · · · · · · · · · · · · · · · · ·		.:	. Kr. :	· « - · - · - ·		~ ~ ~ ~	2 1 = 2 \$
Manganese	2	~ # %:	y ~	ž 4 m	ž •	- 08	I	ا ام بدمری ا	· . *	ζ,			
Copper	b ***, *.		Maria.		34. T.			~~* :	- " \$.				~ 42 × _ f
Boron	. 4				٠^		,5 in 10 ,		4				
Limestone R	equirement	- '			ž.	- 20	2,2, 2,2		, s,	· . · · C	.00 tons 1	00ECCE/a	cre *
			,		50°24°31°.	a name of inc.	*********			<b>*</b> ***********************************	* ** ** *	. * * *** \$1,75	* ×***
` '	× *	` `				d Salinity	i est (29	ıturated		Extract)		Édu 🎒	
,					pH	nductivity			8.3	mmhos/c		(2.69)	(1864) - "786)
,	, ^				***	17 July 11 11 11 11 11 11 11 11 11 11 11 11 11			N. W. W. 20, 24	,	:m~: \!```	04.404	
						dium			220	ppm	Bariga, 465 S	24.181	
·		7		<i>'</i>		tassium	Mar. Arbi	Ú. M. m. sá			N. 1962 . A	0.286	
			,		5.400000000017 0.1000	lcium	s cholle colle	o Sankala New Y	92 27 27.	ppm	is a Superior color	4.604	MOS COO - PROCESSOR COO. O
					w /00/200 to V On A A A	ignesium D				ppm 🦠	ammanistration and as a	0.423	meq/L
					SA	R P	, , , , , , , , , , , , , , , , , , ,		15.25	où Mai 'a 1	Marie Carlos	Name	Marie Land
\$ '					့္ဂ ႏ္လူတို့လ	Billion	â. <u>'</u> ^ '	, ~~ ·~ ·	, O 1,99	98.750 <u>9</u> 9 )			2-25-25

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.



out of state County

Laboratory Number: 231286 Customer Sample ID: SSB4 0-1

## Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone)

979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown: BL	UESTEM	(GRAZ	ING OR H	AY)								
Analysis	Results	CL*	Units	ExLow	VLow L	ow Mod	High	VHigh	Excess			
pH <sup>2</sup>	8.1	(5:8)	* 156 700 14.	Mod. Alk	aline	£ - ` '	, , , , , , , , , , , , , , , , , , ,	1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1	s jire	. 44 B.	A MARCEN 2	√
Conductivity	165	(-)	umho/cm	None			CL*		Fert	ilizer Rec	ommen	ded
Nitrate-N	. 8	<sup>2</sup> (-)	ppm			*	***************************************	***		20 lbs N/a	gcre 🐫 🖔	
Phosphorus	5	(50)	ppm	manani		_				50 lbs P2	O5/acre	
Potassium 🛴 🔭 🤻 🐒	ું_ 636	(125)	ppm	11111111111	ı în în în Çua	mmijininii	n¢itiiinni	II	,	0 lbs K2	0/acre	
Calcium	3,879	(180)	ppm							0 lbs Ca		
Magnesium	ຼັ,ຸ,158	(50)	ppm	_1000000f		uuniuu	iirt "		~ <sub>2-</sub>	0 lbs Mg	/acre	
Sulfur	16	(13)	ppm				IIĢI			0 lbs S/a		···
Sodium	177	( <b>-)</b>	ppm	HIMIHH	utitiani(m			. 4	121	y I	\$\$ * * *	
Iron		grandy a a	· Mar day salues of the sal	na nas nas e se	. *	. : .		Y400 ~ V				
Zinc 🐩 🧸 🎉 🥳 📜	~ ^ = h .'	" " " ' "	~ · · · · · · · · · · · · · · · · · · ·		**!		42 - 11 2		3731	2 \$ \$5. <sup>FC</sup>	·	â · `\$
Manganese	~		4 8				1					
Coppers	4. 1 J.	* '			٠̈- 'بُوْرُ	* 2						يُل الرام الله
Boron							į,			. 1 " 62		
Limestone Requirement	(r	*	^		2A . A		* Ä %'	,,,,	<u> </u>	.00 tons 1	00ECCE/	acre.
				_ ~ _ ~ _ ~	ivastamas varvas		Na min	cz.rom		COSSESSE COMMON A AS-	~ YASZ.	************
3	,		*			y Test (S	Saturate		Extract)		A. S.K.	
				pH		×	-eygg	7.8		Sammer 1879 C. 196 14	·	india ex
,		`	`		nductivi	ty			mmhos/c	m	4./4./6	and the second second
			,		dium		4879° > 7	48	ppm	Million contain		meq/L
	•	· · · · · ·	*,	2007/2007/2006 2007	tassium				ppm		MANY - MANY MAN.	meq/L
					lcium		· · · · · · · · · · · · · · · · · · ·	1616227 - 1 " " "	ppm	3	20000009 A 322223000000000	meq/L
× × ×					ignesiun	nig 's			ppm 🍕		0.286	meg/L
		× .		SA		~ " ///m	1800 L	1.75	Y ********* W AVY	\$4	> 2 200	Kakalana * ***
`		*	<i>x</i> ,	<u>```</u> SS	Paki	.îa*. 13		34.13	18 May 1	Q. 4 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	âu su 2	

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended



out of state County

Laboratory Number: 231287 Customer Sample ID: SSB4 1-2

# Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu Sample received on: 12/14/2007

Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown		•		HAY)							
Analysis	Results	CL*	Units	ExLow	VLow Lo	w Mod	High	VHigh E	ccess.		
pH	* 8:5	` <b>~(5.8)</b> **	7 1441.	Mod. Alk	aline	1.0	* * * * * * * *		2	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	J. S. S. J.
Conductivity	186	(-)	umho/cm	None		С	L*			zer Recomm	ended
Nitrate-N	, i	```* (-)`*	ppm	. imm :		· v · s · · · · · · · · · · · · · · · ·		~/**	2	5 lbs N/acre	20-4 1200-
Phosphorus	3	(50)	ppm	1111111				•	5	0 lbs P2O5/ac	
Potassium 📉 💢	263	<i>ై</i> (125) <sup>°</sup>	ppm		iiluunit(onin			, , , , ,	~ ^ .	0 lbs/K20/acre	
Calcium		(180)	ppm		HIHITI ÜÜLLE			•	, , ,	0 lbs Ca/acre	
Magnesium 👌 📑	. 4. 2. 84	(50)	ppm	~~!!!!!!!!!! <u> </u>	án ann giùnn	Hitaminum	Mr. Erri	7. 13 	~	0 lbs/Mg/acre	
Sulfur	10	(13)	ppm	111111111111			l'''		•	5 lbs S/acre	, , , , ,
Sodium	194		ppm	, innumi	n <u>itation</u> i(oo	:- : **	£ _ £ _		(j. \$ - 1 ·		
ron							i I		-		* 17 17
Zinc		\$	, vå:			· . = **		~ • T :	g se		
Manganese						į	į		•		,,
Copper 😽 🌲 🧎 🧀	× 2 2 2 2	Sample a		:	J. Iza	اروي ``		·4 7	^ · · · · · · · · · · · · · · · · · · ·		
Boron						. (	<b> </b> 				
Limestone Requireme	nt 🔭 🗓		,4. <b>H</b>	&% `^. 7	''.	7-4°	*	, , , ,	0.0	o tons 100EC	E/acre
`	,		v ×	Detaile	ed Salinity	Test (Sa	iturated	Paste E	xtract)		
				pН	]			8.2			
`				Co	nductivit	y .		<b>0.56</b> r	nmhos/cm		
					dium				pm	3.3	95 meq/L
		**		Po	tassium			<b>20</b> r	pm	0.5	23 meq/L
					lcium	Wa		185 p	pm	9.2	32 meq/L
				Ma	ignesium		* . : 22	12 r	pm -	1:0	16 meq/L
				SA				1.50			
,	,				P	9 x x 3 x ""	~972×7 ^ 7 7777 \$	(c ± = = = 300)	3.79% o 1 1 2 2		4.0000

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down...

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur



out of state County

Laboratory Number: 231288 Customer Sample ID: SSB4 2-3

## Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown:	BLUESTEM (	GRAZING OR H	AY)					
Analysis	Results (	CL* Units	ExLow	VLow Low	v Mod	High VHi	gh Excess	
pH ** **.	:ე∧" ç <b>⊊9.0 (</b>	5.8), <u> € , ÷</u>	Strongly	Alkaline	5 m		*	
Conductivity	167	(-) umho/cm	None		c	L•	Fe	ertilizer Recommended
Nitrate-N	· 33	(-) ppm	The wet	de sagai Lag	· 'e,	in the second		1 30 lbs N/acre
Phosphorus	1	(50) ppm	H					<b>50</b> lbs P2O5/acre
Potassium	59 *~(1	125) ppm	ં ભાગમાં છે.	HIIII ÜÜLLIII	48:5°		: id-5	- 60 Îbs K20/acre
Calcium	1,778 (1	180) ppm	. www.			ŅH	y.	0 lbs Ca/acre
Magnesium	31	(50) ppm		HÜNÜÜÜHÜNU!	1 ',-'-	l co		10 lbs Mg/acre
Sulfur	3	(13) ppm	HIHHHHH		•	1	•	15 lbs S/acre
Sodium 🦾	188	- (-) ppm 🤅		ĸĸŇĸijijijĸ,		: :		
Iron						; 		
Zĺnci		Carl Market	) : /;;		:	1 ( ) (*) 1 ( ) (*)		
Manganese						!		
Copper	43441			, , <b>i</b> *	* : ~e.,	1.4.2	; , , ;	
Boron						 		
Limestone Requiremen	it .		30 mg/cm mg/		, , , , ,	2. 2.54- 1	This is	0.00 tons 100ECCE/acrê 🔭
	* /		Detaile	ed Salinity	Test (Sa	aturated Pa	ste Extra	:t)
			рH		a comb.		8.3	
· ,	10		Ç, Ç, Ço	onductivity			.66 mmho:	s/cm
			So	dium			102 ppm	<b>4.428</b> meq/L
, , , ,	<b>~</b>		Pő	tassium	Marie San	. Hääin		5.304 meq/L
				lcium	* LOT N 2000000 N. Y	*// ~	189 ppm	9.445 meq/L
, , , ,			Ma	ignesium	y <b>a</b> ll	Strate hill	106 ppm	8.675 meg/L
			SA		× / /.		.47	
<b>i</b> .	`		- ≪ SS	SP			i.90	

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.



out of state County

Laboratory Number: 231289 Customer Sample ID: SSB4 3-4

# Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Analysis	n: BLUESTE! Results	•	Units	ExLow	VLow	Low	Mod	Himb	VI	Fusses			
								High	VHıgh	Excess		15.	/ 120 am amm
pH:				Strongly	Aikaiine	* ·	~*	~ " ",	, , ,			, ,	
Conductivity	344	` '	umho/cm			20" "	Ct	*	او	Fer	ilizer R	ecomme	ended
Nitrate-N	∍್ಲ್ ಕೆ-್5	( )	ppm		1.4.1.3	2.	¥ 7 *	4,3%		· gali	<b>25</b> lbs l	N/acre	ski
Phosphorus	4	(50)	ppm	, , , , , , , , , , , ,				ļ			<b>50</b> lbs l	P2O5/acr	е
Potassium 5	, 🧤 💥 <b>1</b> ,66	(125)	ppm	<b>ેટ</b> ુંલાલવાના	iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii		mmini	וֹנֻ `` וֹנ		i jajan	0 lbs l	K20/acre	y~ ~
Calcium	3,973	(180)	ppm	11111111111	(11111111111111111111111111111111111111			<b>f</b> II			0 lbs	Ca/acre	•
Magnesium	97	(50)	ppm	્રંમામણાણું		HIIII		H . : (.).	· 40 ~	ju ja ka	0 lbs <sup>3</sup> l	Mg/acre	. ropa iš
Sulfur	54	(13)	ppm	1111111111	1381811111111		HIIIIIII	11111111111		^	0 lbs		
Sodium	881	<i>*</i> (-)	ppm				mul:[#					, J. 7 2, 1	
Iron		,,,,,	* • • • • • • • • • • • • • • • • • • •		,	**	~~ I	√°> ∨	~ ^ 'B i	~ ( m) _ 2	M.	** 2	, > ", ", ", ", ", ", ", ", ", ", ", ", ",
Ż <u>i</u> nc	n De La Carlo de La	دي و	30 100		,* •,2*.	78 77 ° '		7.		28 *	~ *	3	
Manganese	, ** ** **	(Pil) /	,		1 v( "150		. ~~~~ .!	, ^	* 0 %	•	\~ ×	* *	/ - 7m
				re.	13	E.		~	: 22 -			.2×	1. 3. 5
Boron	* *	5	4 × ° × 3 ′ ′	~ ~ .	\ 40 <sup>2</sup> 4	- 1		4	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	, , , , , , , , , , , , , , , , , , , ,	600	,	
Limestone Requirem	ent ~	^		1015	* -	Fire	· · //,,		- 312. "		'nn tone	100 <u>E</u> &Č	Elagro 🚭
Zimojotomo rtoquirom	***			33,44	3	x x	363	2-8	,fr 2	2024	.oo tons	TOOLCC	L/acie c
· .			~	Detaile	بنادگ ای	aine T	Set (\$5	tilrata	d Doct	e Extract	Milks. simin		
	/			pHq		iiry i	źśi ( Śa	ıınıaik		_	i z maživo š		raa Wille
N ,							)));;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	. 3 200	8. * **	ວ 7 mmhos/ເ	241.1887.199	PP 1 - 2000, ARTS	~ (* )
, , ,					naucti	Vity		1,100 ×			, ""m		
				S0	dium	. 4.300ma		. 284. v. a.	22	8 ppm	ft. Mar i .	9.9	13 meq/L
/	•			· Po	tassiu	m`®	i de la V	447	1	9 ppm		0.48	33 meq/L
				Ca	lcium				7	2 ppm		3.58	35 meq/L
· · · · · · · · · · · · · · · · · · ·			*	Ma	ignesii	ım		2.4 2.4	1	<b>0</b> ppm		0.79	7 meq/L
				SA	١R				6.7	0			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
×				99	(D)	S 8 7	2 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	<b>≪</b> ~. ^	\$ 67 A	8	1350 12	"S# 71:2	

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended



out of state County

**Laboratory Number: 231290** Customer Sample ID: SSB4 4-5

### Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown:		I (GRAZI	ING OR HA	AY)							
Analysis	Results	CL*	Units	ExLow	VLow Low	Mod	High \	/High E	xcess.		
pH <sub>2</sub> .	8.5	· (5.8) ·	·	Mod. Alk	àline ,	. 49			1		a. 41. 4
Conductivity	3,560	(-)	umho/cm	V. High		CL*			Fertili	zer Recom	
Nitrate-N	13	~ Ž(-) 🦠	ppm		aa i		, . 	* i : 1 : 1 : 1 : 1 : 1 : 1 : 1 : 1 : 1 :		0 lbs N/acre	4 ~:·
Phosphorus	0	(50)	ppm						5	<b>5</b> lbs P2O5/	acre
Potassium	42	(125)	ppm	<b>ZÜ</b> ÜÜÜÜÜİ	inin i	: 32 i	1			5 lbs K20/ad	re'' 🦎
Calcium	29,459	(180)	ppm	14611111111	mannannan	HIII HIII K				0 lbs Ca/acr	
Magnesiūm	259		, ppm		trjugatijaanin					0 lbs Mg/aci	re înîri şi
Sulfur	126	(13)	ppm	111111111111111111111111111111111111111	umanitaniani	giinnui þi				0 lbs S/acre	
Sodium	2,574	(-)	ppm	!monanii	umanijanjija	igomondi				W. A.	. til
Iron							e . ·		ev v	~ ×*	· a_ (
" o " o " o " o " o " o " o " o " o " o		5 , "	4			100 200 12	sight [/		B. r		)"
Manganese	•			. :	"a alaa		:			ab.	5 % **
Çopper 📜 🗀 🚕			v - 4	,	, å··	· 42 j	" " <b>!</b> ,;	·		. Silvid J. Ži	
Boron		No.	** ~		٠	, I,				, .	3
Limestone Requiremen	<u>t :                                   </u>		*	*		^^			0.0	0 tons 100E	CCE/acre
	5				87.4_888888.3** <u>~</u>		wygaranga zag		<u> </u>	. ~ Kenadanasanana	<b>*****</b> *******************************
		•			d Salinity 1	est (Sat	urated		extract)	C. Salanda	
				PH - ≎∷sc ∴		,	######################################	8.0	and the second s	* *****	
	*		` '',		nductivity	10000					
					dium	The Table 1		1812	opm	78 	3.851 meq/L
						30 37					.716 meq/L
					lcium	1 ASSESSED 15 (2.1)		37	opm	1 27 mar na 1880 - 1	.863 meq/L
*					gnesium				ppm	10	0.310 meg/L
,					∖R P.>- ``;^^^^	- N/20%		31.96	THE STATE OF THE	eta. e 💉 🗀	* . * . * . * . * . * . * . * . * .
				/# <sub>Ap</sub> ;; O O	·•	. W.W	2000 3	00.50	ria, Witter A		<u> </u>

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water. Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down...

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.



out of state County

**Laboratory Number: 231291** Customer Sample ID: SSB5 0-1

- O----- DI HECTEM (CDAZING OD HAV)

#### Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007

Area Represented: 1 acres

Crop Grow	vn: BLUESTEM	(GRA	ZING OR H	AY)									
Analysis	Results	CL*	Units	ExLow	VLow l	Low	Mod	High	VHigh	Excess			
pH 🔭 📑 🧦 🔭	9.0,	(5.8)	%, <b>-</b> ; ′	Strongly	Alkaline	ر م مرسو م مرسو			o ie		- S		
Conductivity	125	(-)	umho/cm	None	~ ~~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~		CL*			Fer	tilizer Re	comme	nded
Nitrate-N	<b>.</b>	(-)	ppm	11:			. :	25:	i Baruis	5 /4 °	30 lbs N	l/acre	. jap
Phosphorus	4	(50)	ppm	HIIII			i				<b>50</b> lbs F	2O5/acre	Э
Potassium ***	្ត្រី 🦮 📇 .113	(125)	~`~′ <b>√ppm</b> ;; .		ininininin(mj	iliinin) j		~ 55 }	1 1223.	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	10 lbs k	(20/acre	ساھاڑار ہے۔
Calcium	2,677	(180)	ppm								0 lbs 0		
Magnesium	85	(50)	ppm		hniiimm			ly :	1 2:	I.	, 0 lbs N	/lg/acre	ant.
Sulfur	13	(13)	ppm				mmi				0 lbs 5		
Sodium		(-)	. ⊸ bbū	inneniij)	ngggggjų in	II , E				· 4. 2.	4	, s	
Iron	v					в.,	. į	:				~ 2~~ ~,	-
Zinc,			* \$ \$ \$	· · · · · · · · · · · · · · · · · · ·	· : : : :	". i,	S	<u>.</u>		5 4. S.	12.00	un eunäm	,, <u> </u>
Manganese	.x4	,	, .				1		, , ,	. C. L. C.		٠	وه پرسال د د
Copper		* 2 mm /	Ni Vinis	` \$05 m	: , ·	:	1	3, 5 E				×	
Boron	* * 3.0	· ~ ~	. *) 24.	, ,	•	w	i	2.	¥ .	.>			w.Ye. 1
Limestone Requiren	nent ******	3 .	" " " " " " " " " " " " " " " " " " "	* 'Ér	· · · · · · · · · · · · · · · · · · ·	· . 1	. (# <u>2</u> 9	16 ft 35		- T	<b>0.00</b> tons	100ECC	E/acre
				62200000000000000000000000000000000000	# % <u>_</u>	,			24 - ZASA 4 (A.A.	1277 e milital - 1281.	Cumagang sous is	in indowers	smala emate de
	× × ×				ed Salini	ity I es	st (Sat	urated			) *38.466 *	 Wii	7. 2 am 2
				pł				- 7K.894	8.6				6-703.780A
					onductiv	ity <sub>ĝi</sub> ,	ger School			mmhos/	cw <sup>3</sup> 450	· · · · · · · · · · · · · · · · · · ·	
				30 D	odium otassium		4 2 × 4 × 10	Manuer et 1	03	ppm	me to the terms of	Z.1.	38 meq/L 34 meq/L*
· · · ·	٧			7000	****	ı ., ,	Sign de	-3 <b>%</b> ( ).		ppm2 ~	د چينې د د.		
`					alcium			8 200 °		ppm	Marks Sa.		93 meq/L
`					agnesiui	m						1:24	<b>19</b> meq/L
,					AR SP	77°5, 2,	w.g	1 1	1.04 15.94		200 /0 00 /000	~~ ~ ,	r waa da b
l					<u> </u>	111 24 2 ,	<u> </u>		/ 13.34	AND NOW IN		1.242.13	,

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.



out of state County

Laboratory Number: 231292 Customer Sample ID: SSB5 1-2

Crop Grown: BLUESTEM (GRAZING OR HAY)

### **Soil Analysis Report**

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

•	: BLUESTEN	•		4Y)							
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHıgh	Excess	
pḤ · ṭ · · · · · · · · · · · · · · · · ·	<b>8.9</b>	ੋ(5.8)		Strongly	Alkaline	, 35 20 20 20 20 20 20 20 20 20 20 20 20 20	-	* %,	" " " " " " " " " " " " " " " " " " "		
Conductivity	288	(-)	umho/cm	None			CL				ertilizer Recommended
Nitrate-N	3 × 3	( <b>-)</b> .	ppm →	· ]] ]	٠.,	. w.a	and the	t gs	•		30 lbs Nacre
Phosphorus	3	(50)	ppm	IIIII			1				50 lbs P2O5/acre
Potassium	: 133	(125)	ppm	; <b>, , , , , , , , , , , , , , , , , , ,</b>	iidigigd			4. h	· / ***	Ma ji	្ន <b>0</b> lbs K20/acreំំងង់ខ្លែង
Calcium	3,859	(180)	ppm	1111111111			11111111111	III			0 lbs Ca/acre
Magnesium	112	(50)	ppm			ÜHÜÜHH					🥻 🐧 lbs Mg/acre 💢 🚑
Sulfur	25	(13)	ppm	11111111111				HIII			0 lbs S/acre
Sodium * , * *	619	( <del>-</del> )	→ ppm	Himimi	aaniniit				·X, `	·	
Iron		•					i				
Zinc		ila.	, The sale		r.c.	2	Ž. (, )	30	: """		
Manganese	_										
Copper		* *	- b - 1 - 2 - 22		' : I	, L,A,	. ' i	~ ,0 .		~ ^ _ ^	
Boron							. I				
Limestone Requireme	int	** ***		~ .	* "", "",			* /	tiga,	·	0.00 tons 100ECCE/acre
						v //	www.aw w w		0.7 cm 20 W. 40		
<b>S</b>	6			Detaile	d Sali	nity T	est (Sa	turate	d Past	e Extra	ct)
				ph	1	5 400/00/ 1000			8.	AN ARCHONOGO, CONSUMAN A AA -	
× ×				, Co	induct	ivity				4 mmho	s/cm % y %
				Sc	dium					4 ppm	<b>8.874</b> meq/L
,	<b>\</b>		,	1767 / " "	tassiu	2 m 34-3 1				6 ppm	
	,				lcium		anggyaggery v	// ev 20		7 ppm	2.369 meq/L
	•			M	agnesi	um				3 ppm	0.264 meq/L
					٩R				7.7		# # W W
× ×	^ ,			Ş. ŞS	ŠP 🚉 .				76.0	<b>,3</b> ,	

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended



out of state County

**Laboratory Number: 231293** Customer Sample ID: SSB5 2-3

Crop Grown: BLUESTEM (GRAZING OR HAY)

# **Soil Analysis Report**

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007

Area Represented: 1 acres

Analysis	Results	•	nits ExLow	VLow Low	Mod High	VHigh Excess	
pH.4 *	· 9.0 -	(5.8)	Strongly	Alkaline: 🌞		1.17 N. 1974 .	*/ */*/* * * * * * * * * * * * * * * *
Conductivity	632		ho/cm Slight		CL*		rtilizer Recommended
Nitrate-N	, <sub>1,3</sub> ;	, (-) p	ppm L.		·., ,		∽ 30 lbs N/acre **
Phosphorus	0	(50) p	ppm		, ji		<b>55</b> lbs P2O5/acre
Potassium 🐂 📜	62		pm. iiiiiiiiii				60 lbs K20/acre
Calcium	28,397	(180) p	pm IIIIIIIII		3881100011M18111111111111111111111111111	(II · · · · · · · · · · · · · · · · · · ·	0 lbs Ca/acre
Magnesium (							
Sulfur	W_# ##		0 0 7008 5 00 .		)		0 lbs S/acre
Sodium	996		pm'	miumuimun	mininte 🗼 🔭	E∮ , Te-1 . 5-	· · · · · · · · · · · · · · · · · · ·
Iron		~ *	: *.				
		, «2,»,«°,		77 7 7	· •		
Manganese Copper , A		, , , , , , , , ,					
Boron Limestone Requirement		~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~			, <b>I</b>	and a second	0.00 tons 100ECCE/ácre
> ·	<b>\</b>				est (Saturate		t)
				nductivity odium		8.5 3.35 mmhos 539 ppm	
			· P	otassium		6 ppm	0.144 meq/L
5,		,	M	alcium agnesium AR		55 ppm 4 ppm². 18.97	2.749 meq/L 0.304 meq/L
·					ring Cârt in a a' sir	88.00	

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended



out of state County

Laboratory Number: 231294 Customer Sample ID: SSB5 3-4

#### Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone)

979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grow	n: BLUESTEN	/I (GRAZ	ING OR H	IAY)									
Analysis	Results	CL*	_Units	ExLow	VLow	Low	Mod	High	VHigh	Excess			
pH *		(5.8)	259.72	Stronglý	Alkaline	) , , ,	, ,	,		·, &		ģ.	; 3
Conductivity	1,350	(-)	umho/cm	Moderate	e		CL			Fertil	izer Reco	mmende	d
Nitrate-N	10	(-)	ppm	> uniiiini		7 J			21.61	, , , , , , , , , , , , , , , , , , , ,	5 lbs N/ac	re <sup>&lt; y</sup>	
Phosphorus	0	(50)	ppm				i				5 lbs P2O		
Potašsium 🚽 🐪	1112 <sub>:</sub>	. (125)	ppm	* :: mmmgi		n well row [ ]	· ~ < 1		* ~ \%		l <b>0</b> lbs K20/	acre	on Ration of the second of th
Calcium	29,939	(180)	ppm	1111111111					H		0 lbs Ca/a	cre	
Magnesium	196	(50)	ppm	ាំញើញព្រំ	mminnij	anijnin)		<b>IIII</b> :	• */		0 lbs Mg/a	icre."	~ x.
Sulfur	84	(13)	ppm						HII		0 lbs S/ac	re	~
Sodium [ ]	1,785	Ça* <b>(-)</b>	, ppm	jingeneti	ailininii ja	મલોવામા	HHHHH	HIII :	,	V . Ne.		s '	~ Y
Iron	,					/		···		0.0 7.709	ny	n northeau	,
ŹĨĥc <u>,</u> Ţ	T.	÷ ′	. · C. Š.,						) . [En. 2.	^ .	20.20		`. A
Manganese			2 0	"·	w			, and			* at. \	) , m _	
Copper		100		, : · · · · · · · · · · · · · · · · · ·	(1) A. (1)	· ·	776	: 73.	1.4	;	Egy" .	41, 30, 30	2 18
Boron	/(4	1 "	,		,		i	m ms	7 4 . 4		s and so		> / 12
Limestone Requiren	nènt 🚉 🤲 🤻		<u> </u>		· · · ·		· /s · .		./2.%	" <sup>2</sup> 0.	00 tons 100	DECCE/act	re · · ´
				************ ** ^	* < / 90000**				,	ery and distributions and	**	- 2 SAMPETTARINE & TENETT VC . 2	, . · ·
· · · · · · · · · · · · · · · · · · ·	* *	٠.	,	Detaile	ed Sali	nity Te	st (Sa	turate	d Paste	Extract)	MORE COME		¥. 4%
				ph			n / 4hn	. 6.9079067900X	8.2		* ******** 1.2****		~ 200 NOTO
						ivity	11500 T. 1600			7 mmhos/cn	20 m m m m m m m m m m m m m m m m m m m	William Market	wa
, , ,					dium		/* r	www.y.quuq		9 ppm		<b>59.574</b> m	
/ /		8	*	24 0 7 cmc do.	tassiu	6-7- C	i ng	<b>M</b> . '. '		3 ppm		<b>0.320</b> m	~ · · · · · · · · · · · · · · · · · · ·
			t		lcium		10 CE 350	*		8 ppm	16.2 s 19	6.910 m	
*				*** *	gnesi	um 🧢			**** * * * * *	8 ppm	. <b>Alla</b> li	<b>0.667</b> m	neq/L
			,		AR		~~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	38 A 1 W	30.6		/ (********************************	es 45°°°.	* ******** *
		A /		Lar S	SP% 🦼	i î î re	99 P 2	Miller France J	88.3	V <sub>ince</sub>	1000	The state of the s	· 1000

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down..



out of state County

Laboratory Number: 231295 Customer Sample ID: SSB5 4-5

#### Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007

Area Represented: 1 acres

Crop	p Grown: BL	UESTEM (	GRAZ	ing or h	AY)								
Analysis		Results	CL*	Units	ExLow	VLow Lo	w Mod	High	VHigh	Excess			
pH` T Maria		8.4	(5.8)	I de Large	Mod. Alk	aline 🙏 🥍		, ,	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~		*	د د	
Conductivity		2,570	(-)	umho/cm	V. High			CL*		Fert	lizer Reco	ommende	d
Nitrate-N	, May Tira	. 111	*· (-)	ppm	, jaagumi	, , , , , , , , , , , , , , , , , , , ,			· -*`:		<b>15</b> lbs N/a	cre. 🔔 📸	.,
Phosphorus		0	(50)	ppm							55 lbs P20		
Potassium		64 (	(125)	ppm		HIII ŽURI (TIIII)		1244		~ \$ . 3× .	55 lbs K20	)/acre	
Calcium		30,490 (	(180)	ppm		MINIMANIAN I			1		0 lbs Ca/	acre	
Magnesium		210	(50)	ppm		aanijaja (ja ja  A 2 25 1	. ~ .	*	·	0 lbs Mg/	acre.	۸ ,	
Sulfur		90	(13)	ppm		Marianiiquad					0 lbs S/a	cre	
Sodium	* *	2,231	(-)	ppm,	``````````````````````````````````````	iinnui (iini		HIIIIIII :	*****		*****	" N, " " " " M pt	,′%_^~
Iron	No.		* "	7 m 7 m 7				 	2.54	,,	~ "* ,	, 35,000, 50	**
Zinc			*	. In in			·	1. 3		* *	,	ýď.	1
Manganese			/ <sub>1</sub> 8	49			* \/.60	1 4		AL			, ,
Copper		~ * · · · · ·		The state of the	`. · ·,`		;;·•••••••••••••••••••••••••••••••••••	¦"∶		/A	* ***	# *	A1 E
Boron	·			A 117 *	San at	28 it.		1		_	100 MARI	,, > ×/**	** ~ ~ ^ a
Limestone Re	quirement	\$ 1 /B	,	*,		1 0 3 4 4 4 7	•	irs#	*	0	.00 tons 10	00ECCE/ac	re :
	,			,	الله المالية	المتناف في			. D42			6.332.27	E.maker A.
/ <b>\</b>					petane	ed Salinity	i i ezi (3	aimiaiei	به ۲۰۹۶ 7.7	EXHACL			
×				· .		nductivit		***		mmhos/c	~ ^		A 1888
, ,	*					dium	y managaran		1428	vacan an min		<b>62.153</b> m	. ****
,						otassium	-384 S.AT	Lá. v v		ppm 🦾	,, , , , , , , , , , , , , , , , , , ,	02.133 ii	
·	•					lcium	• 4417.72	~		bbw Sbiii 🐃	*	36.628 n	m
× ,	y					agnesium				ppm		3.255 ŋ	
*	`		`		* ***********	,g,,,o,,,,,,,,, \R			13.92	PPIPILINA.	'	, , , , , , , , , , , , , , , , , , , ,	ich Fi
	×	,	. ,	, *,		SPEE TO						in the second	. Bušrš
								(77 / "	Advanta A	OY * A.A A.A.Z.		الكك سقاته ميك	40 WH 1/19

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down...



out of state County

Laboratory Number: 231296 Customer Sample ID: SSB6 0-1

Crop Grown: BLUESTEM (GRAZING OR HAY)

# **Soil Analysis Report**

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Sample received on: 12/14/2007

Visit our website: http://soiltesting.tamu.edu

Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown: E	BLUESTEN	VI (GRAZ	ING OR H	IAY)							
Analysis	Results	CL*	Units	ExLow	VLow L	ow Mod	High	VHıgh E	xcess.		
pH 📜 🚉 🧖	- 8.9	(5.8)	. F	Strongly	y Alkaline	, , , , , , , , , , , , , , , , , , ,	,	24.1-		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	( + v
Conductivity	135	(-)	umho/cm				CL*		Fertili	zer Recommen	ded
Nitrate-N	6	(-)	ppm	1000		: " · · · · · · · · · · · · · · · · · ·		**·	. 2	5 lbs N/acre	
Phosphorus	5	(50)	ppm	1111111111	•		1		5	0 lbs P2O5/acre	•
Potassium 🔭	106	(125)	ppm			ığıldını -	1 ***		. 1	5 lbs K20/acre	,"
Calcium	3,921	(180)	ppm				•			0 lbs Ca/acre	
Magnesium **	81	(50)	ppm "	a inimini	į sijuu maraitė iš		181 j	., ,	ř.,	0 lbs Mg/acre	即以据集 (2)
Sulfur	15	(13)	ppm		inningani		ļ ,			0 lbs S/acre	
Sodium	~ 211 <sub>°</sub>		🚉 ppm 🛭	- juiinii	Hűnikün(ku		:				: "2" '
Iron							1			-	
Zinc	e suma	* * * * .	· šgrž "m. ".».	, i	· ~	: 22. : 22.					¥ .\$3
Manganese							1				
Copper	. Far -		·	the sai		1000 W 73 1	· · · · · · · ·	:			
Boron		/ v) a		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		* *					
Limestone Requirement		dhì.	ร์ สร้างก็เรื่อ			igā s		) / (A	0.0	0 tons:100ECCE/	acre,
				* - * *********************************	7/0 N 7. 1911111 /000 100		· ·	······································			
	V 3	*	٧	Detail	ed Salinii	y Test (S	aturate	d Paste I	Extract)		
				pl		NON DE REPRESE 6000		8.2	-00 - 10790000000 2011%	WA 25 MW V . 2000 M M M M M	
				,	onductivi	tý 🎨 📆 🤲	diskalitik	0.50	mmhos/cm		
					odium	WOOD WALLS			ppm	2.414	meq/L
, ~ · · · · · · · · · · · · · · · · · ·	*			`°°° P€	otassium	-1. Sec. 127		8	ppm 🦂 🖣	0.207	meq/L
					alcium	* * ar	a ». «.a».	45	ppm	2.245	meq/L
					alcium agnesiun			45 7 3,	ppm	6 /56 /	meq/L meq/L
				, M S/				45	ppm	6 /56 /	V

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended



out of state County

Laboratory Number: 231297 Customer Sample ID: SSB6 1-2

## Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown: BLUESTEM (GRAZING OR HAY) **Analysis** Results CL\* Units ... Hq **9:0** ₃ (5.8) Strongly Alkaline 2 -38 · Conductivity 129 (-)umho/cm None Fertilizer Recommended 3 Nitrate-N ppm 30 lbs N/acre 1111111111 5 (50)**Phosphorus** ppm 50 lbs P2O5/acre **132** (125)ર ્કે. દેવામાં મામલામાં માત્રો માં માં માત્રો માત્રો માત્રો માત્રો માત્રો માત્રો માત્રો માત્રો માત્રો માત્રો મ Potassium 0 lbs K20/acre ppm 3.847 (180)Calcium ppm 0 lbs Ca/acre ુ93 Magnesium (50)ppm. 0 lbs Mg/acre ndmanning and interest and a state of the st Sulfur 17 (13)0 lbs S/acre ppm 284 Sodium ppm iron Zinc Manganese Copper - 3 Boron Limestone Requirement Detailed Salinity Test (Saturated Paste Extract) Conductivity 0.42 mmhos/cm Sodium 58 ppm 2.531 meg/L 80 ppm Potassium 2.052 meq/L Calcium 134 ppm 6.670 meg/L 4.175 meq/L Magnesium ₹51 ppm → SAR 1.09 SSP 16.41

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.



out of state County

Laboratory Number: 231298 Customer Sample ID: SSB6 2-3

#### Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown: BLUESTEM (GRAZING OR HAY) CL\* Units **Analysis** Results FxLow VION VHigh Fycass 8.3 (5.8)Mod. Alkaline 1,000 Conductivity (-)umho/cm Moderate **Fertilizer Recommended** Nitrate-N 6 (-) 25 lbs N/acre ppm **Phosphorus** 3 (50)ppm HIIII 50 lbs P2O5/acre **65** (125) httppm : Potassium 55 lbs K20/acre 15,740 (180)Calcium 0 lbs Ca/acre ppm 86 ₹(50)<sub>1</sub> Magnesium ூர் ் 0 lbs Mg/acre 🏝 ppm Sulfur 61 (13)ppm 0 lbs S/acre Sodium 514 વર્ષો છેલા છાલુકા મામાં મામાના છે. **(-)** ppm Iron Zinc Manganese Copper Boron Limestone Requirement 0.00 tons 100ECCE/acre Detailed Salinity Test (Saturated Paste Extract) 7.9 Conductivity 4.21 mmhos/cm **Sodium** 21.458 meg/L 493 ppm Potassium 11 ppm 0.278 meg/L Calcium 157 ppm 7.835 meg/L Magnesium 🥍 9 ppm SAR 10.37 06748838 SSP 3 70.80

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down..

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.



out of state County

Laboratory Number: 231299 Customer Sample ID: SSB6 3-4

Crop Grown: BLUESTEM (GRAZING OR HAY)

## **Soil Analysis Report**

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Analysis	Results	•	Units	ExLow	VLow Low	Mod	High VHi	gh Exces	ss.
pHR32/	÷	(5.8)		Mod. Alk	aline 1		· ; ·		
Conductivity	2,130		umho/cm	High		CL	•		Fertilizer Recommended
Nitrate-N	28	¥ (-)	ppm	*;iiiiiiiiiiiiii		III) - 🚁 🖯			0 lbs.N/acre
Phosphorus	0	(50)	ppm			1			55 lbs P2O5/acre
Potássiúm 🥞 👢	76	. (125)	🏥 ppiù 🧢	Minnin	oînima (uma	順 、湯		:	45 lbs K20/acre
Calcium	30,148		ppm		44444444444444444444444444444444444444				0 lbs Ca/acre
Magnesium 🤼	211	(50)	ppm		iiijiiniininin			*	0 lbs Mg/acre
Sulfur	200		ppm		HIIII ÜÜÜÜ ÜÜL				0 lbs S/acre
Sodium	2,232	<i>∞</i> (-)	ppm		anan jirijinii inn		mma (j. j.		, ,
Iron		~			A 19 M M 1999				***
Zinc	, 1000 × 2000	1545	s " n.'s w off o left	: :		~ }	4: 3	ar fra famo f	
Manganese						. !			
Copper		, (20)			Z . :	%		: .	
Boron			. 7 2000. 7 3			, I	~ N		300 S 15 . 27
Limestone Require	ment	× .	<u> 4 500</u>	Brkr sir	n(, 1)	- Salar			0.00 tons 100ECCE/acre
				200020000000		ina nitrinia nitrav	X / Y ^^* .	^ . > ^^ 9/98/88/98/98/98	and an income the second of th
<b>\</b>		`		Detaile	ed Salinity	Test (Sa	turated Pa	iste Ext	ract)
				ph.	(	kananan sa sa sa Talanan Ta	···· •	7.8	
,		,	*		nductivity	14. S. S.			hos/cm
					dium	" a, 5a., 5 %.		<b>525</b> ppm	
·			^		tassium	253,7			
					lcium	www		<b>854</b> ppm	
*		`			agnesium	.e.c.:96.3			3.514 meg/L
1					AR	· > 54 ~9888 949		3.82	- 1 27 ° 723, 500, / Japanes 7 ° 4004 (J. 112,007 575000
* *	5		¥	SS	<u>SP., </u>		5	8.72 <sub>·</sub>	

<sup>\*</sup>CL=Cntical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down.



Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 

345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Soil Analysis Report

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

out of state County

**Laboratory Number: 231300** Customer Sample ID: SSB6 4-5

Crop Grown: BLUESTEM (GRAZING OR HAY)

Analysis	Results	CL* Units	•	VLow Low	Mod High	VHigh Exc	ess	
		`(5.8) <sub>\$\text{2}\$</sub> -	Mod. All	kåline			1 1/4 - 1 1/4 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	, , , , , , , , , , , , , , , , , , ,
Conductivity	3,120	(-) umho/c			CL*		Fertilizer Recommen	ded
Nitrate-N	·	(-), ppm	100000				15 lbs N/acre	ú.
Phosphorus	0	(50) ppm	,		1	•	55 lbs P2O5/acre	
Potassium (1)	`	(125) ppm			Óm Has		<b>30</b> lbs K20/acre	
Calcium	29,996	(180) ppm	1111111111		HISTOLOGIA DA MATATATA	1 <b>  </b>	0 lbs Ca/acre	
Magnesium	256	(50) ppm	ોું મુખ્યામાં કે કે કે કે કે કે કે કે કે કે કે કે કે		initainitaine i		0 lbs Mg/acre	
Sulfur	147	(13) ppm			nga tangan		0 lbs S/acre	
Sodium	2,900	(-), bbw		ininimi juniili	u)iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii			- "#" X
Iron	w v						<u> </u>	a pre-
Zinc	The transfer of the	bálh <sup>Thr</sup>	*	i de co		****		
Manganese			:				······································	
Copper 🕍 🔭 🔭			~ <b>:</b> ,			·. · · · · · · · · · · · · · · · · · ·		, , ,
Boron	X	× * * *		24	, i., ., ., ., ., ., ., ., ., ., ., ., ., .	27 A	26.7	
Limestone Requirement		The second second		9 1 2 26	** % % ** .,	, , , , , , , ,	0.00 tons 100ECCE	acre 🚆
			· ·	/w.rx% 2.~		/		
			, "		rest (Satura	THE THIRD BY AND A THE TANK	(tract)	
			pł			8.0	mhos/cm	
, , , , , , , , , , , , , , , , , , ,	, ,		. 207 07400	200. WWY 3 /	k <b>Perim</b> s sõs.	v	2000 00 000 000 000 200 v · · · · · · · · · · · · · · · · · ·	
			111	odium	4 Wax	1544 pr	om 67.191	* *
,	. *			otassium			0.747	
	,	•	Ca	alcium	15. <b>96</b> 167424	1027 pp	om 51.252	meq/L
•			• 2 M	agnesium;	ana ka Marine	59 pr 12.69	om	meq/L
	,	. "、		AR SP				

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water. Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down .



out of state County

Laboratory Number: 231301 Customer Sample ID: SSB7 0-1

# **Soil Analysis Report**

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX) Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown: E	BLUESTEM	(GRAZ	ING OR HA	AY)							
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	
pH <sub>3</sub>	8.4	(5.8)	." * <u>.</u>	Mod. All	kaline	i.k	27 2	1,5 %	~ (p ~ ~		The Capture Capture Capture of
Conductivity	198	(-)	umho/cm	None		co tentro	C	L•			ilizer Recommended
Nitrate-N	1.75 ; <b>5</b> .	Ĩ(-)	, ppm	֓֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	· ·	· · ·	~´ ~ ~	: .	. , .		25°lbs N/acre
Phosphorus	5	(50)	ppm	uuuuni				i		•	45 lbs P2O5/acre
Potassium	145	(125)	ppm	:#####################################	mműni(	IIIIIIIIII	IRRINIE	F -1	~ ~ <sub>**</sub> , *, *	78 × 5 / (	0 lbs K20/acre
Calcium		(180)	ppm					•		•	0 lbs Ca/acre
Magnesium	71.		ppm ,			7	, ,	* ^ X.**		*	0 lbs Mg/acre
Sulfur	20	(13)	ppm		manni			F	*/ ****		0 lbs S/acre
Sodium	, 157	· 🚉 (-)	ppm 📑	į irijinijui		<u> </u>	> \\\ \dagger \alpha \\ \alpha \\ \dagger \alpha \\ \alpha \\ \dagger \alpha \\ \dagger \dagger \alpha \\ \dagger \dag	iga .		·4 · ž	
lron	1 1 2	~	1.054.00 T. 11 T. 11			,	my.		*v#* .3***	~~ <u>₹</u> ~	
Zinc		! ^.^ .>*,		· ''' .			3.2		• 12474 11 4.	rémin la la la la la la la la la la la la la	A SOUND AND AND AND AND AND AND AND AND AND A
Manganese	. ** x. * .		v 2> w <sub>1</sub> 2 <sub>3</sub> -	÷		۵		! ! <sub></sub>		·	and the same of the same of
Copper	. *** *** ***	,,, ,,	· ^ 2	, ifthi.	<u>.</u> ,	, ~		l <sup>/%</sup> .	: ~~~	:	
Boron		ä,					!	i ,			
Limestone Requirement	s <sub>i</sub>	<u> </u>	Yarakii musa	~ 7 <sub>6</sub> , /a	٠	Zaji 4 z	. Arga	in jan e	*** (*** )		0.00 tons 100ECCE/acré
				`		~ ~ ~ ~ ~ ~	80. Ja			<u> </u>	the same and make a contract
						nity i	est (Sa	iturate	×	e Extract	
			,	pł		75. W.W.	. N. akana sa	********	8.	**** ": " " ***	
*	. "		× .	0.000.000.000.000.000.000.000.000.000.	onduct	ivity	. > são	eir <b>M</b> ill		4 mmhos/	- ADMINISTRAÇÃO - ADMINISTRAÇÃ
	*,				odium			31. 1-8. at 186		8 ppm	1.661 meq/L
^					otassiu alcium	EII 、 3	~ * * * * * * * * * * * * * * * * * * *	47. EX	WW 74.19 79974	9 ppm	www
					***************************************		/4/// .			9 ppm	3.424 meq/L
· ·				Secretarian conditions	agnesi AR	uiii	n se thethar 7, " n Sive stilled copses		1.2		0.200 meg/L
, ,		,	×	V -0-000	V W WW + 100 5						and the state of t

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.



out of state County

Laboratory Number: 231302 Customer Sample ID: SSB7 1-2

Crop Grown: BLUESTEM (GRAZING OR HAY)

# Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007

Area Represented: 1 acres

Analysis	Results CL		ExLow VLow	Low Mod	High VHigh	Excess	
pH ***	<b>8.4</b> (5.	.8) -	Mod. Alkaline	i de de la	4.201.51		. i Ž.
Conductivity		(-) umho/cm	None	c	L•	Fertilizer Recommended	1
Nitrate-N	<sup>77</sup> € 2 <u>5</u> 113 (	( <del>-</del> ′)ppm_ <sub></sub>				🧓 🖟 30 lbs N/acre 🕯 🗠 🕍	15 m
Phosphorus	٠,	0) ppm	008014801(8008001		, 	45 lbs P2O5/acre	
Potassium	<b>179</b> (12	5) 🤻 ppm 🦪	જુ ભૂમાણમાં ભોવસમાં મુંદ	til 1000 til jarii 100 til	<b>į</b> į ( , , , , , , , , , , , , , , , , , ,	0 lbs K20/acre	ا . ، پ
Calcium	<b>3,623</b> (18					0 lbs Ca/acre	
Magnesium	w	0) ppm				0 lbs Mg/acre	50 20
Sulfur	64 (1	3) bbw			<u> </u>	0 lbs S/acre	
Sodium	442	(-) ppm	mignamilain				
Iron		atrus a and		• ^			
Žinc, Ž				~ 4 · 3 %			• ]
Manganese	33	ه ر پخود پس	:		! !	1 41 43 8 8 8 8 8	
Copper É. É.	724 ASS 7	r attract	at y	! . • . ·	<u> </u>		عرد
Boron	~~		THE THE		! !	·	. 4 _nnn
Limestone Requirement	x		2 × 2	<u> </u>		<b>0.00</b> tons 100ECCE/acre	) ^
	,,		Detailed Cal	nity Toot /S	ALTAGA BAGA	Extract)	ania.
4 🔍			pH	ninth Lest (20	<u>يري</u> يد atujateu r 1.8 /		
, , , , , , , , , , , , , , , , , , , ,			Conduc	ivitvi i i a i i i i		5 mmhos/cm	) W.A.4
	`		Sodium			3 ppm <b>8.418</b> me	
			Potassii	······································	19. 18. 5 : 10. 10. 10. 10. 10. 10. 10. 10. 10. 10.	4°ppm	:q/∟ 20/13%
`			Calcium		100	6 nnm 5 287 ma	۱/ne
	>		Magnes	um 🔌 💥 -		5 ppm 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	۰۹/۱ ۱۵/۱
	•		SAR	J. W. A. J. Barrier	4.9		2473%
			~		7.0	•	

<sup>\*</sup>CL=Cntical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended



Tulsa, TX 74135

out of state County

Laboratory Number: 231303 Customer Sample ID: SSB7 2-3

# **Soil Analysis Report**

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown:	BLUESTEM (GRA	ZING OR HA	AY)			
Analysis	Results CL*	Units	ExLow VLow	Low Mod	Hıgh VHigh	Excess.
pH .	្តី រដ្ឋារិក្សា <b>8.6</b> ្នុ (5:8)	<b>.</b> . ,	Mod. Alkaline	223		
Conductivity	425 (-)	umho/cm	None	CI	•	Fertilizer Recommended
Nitrate-N	કેલ કેલ્લિક <b>6</b> ફેલ્સ કુ(-)	) ppm				25 lbs N/acre (
Phosphorus	8 (50)	) ppm	annini jinan	i i	, , 	<b>45</b> lbs P2O5/acre
Potassium 💮 🦠	181 (125)	)≩ 💆 ppm 🐥	ំរដែលព្រំវិញពេលពេកា	Minnipoon	NG 35.	்/ ் ் ு ூ இ- <b>0</b> lbs K20/acre
Calcium	<b>1,793</b> (180)	) ppm	- 191009 (1000000)		411	0 lbs Ca/acre
Magnesium	96 (50)	) ppm	, ingininojnjumum	uniineni tantur		0 lbs Mg/acre
Sulfur	<b>59</b> (13)					0 lbs S/acre
Sodium	657 (-)	) Î	*Handaniiniini	monitaitil" - ;		
Iron		~ ~ ~ ~		مر در ودرون		A. A. A. A. A. A. A. A. A. A. A. A. A. A
Zinc	i was in			· · · · · · · · · · · · · · · · · · ·		
Manganese	nar 21 m² s				2 %-80	***
Copper		Til Mass fat -	Side of L			
Boron			******* ***	*		****
Limestone Requirement	Congression services		**		2	0.00 tons 100ECCE/acre
,			(n. %)		gvwo, grillong	
	×		Detailed Sali	nity lest (Sa		20.70 grands and 20.70 (0.00 grands)
	,		pH		8.	W 3 V V W 0 AA 000000000000000 A 23 W3/C V 0A V A AV AA
		· · ·	Conduct	in ita	0.2.20. 2000	0 mmhos/cm
	ŧ		* **********			5 ppm 11.532 meq/L
^		<b>S</b>	Potassiu Calcium			6 ppm 0.406 meg/L
			Magnesi			4 ppm 3.696 meq/L 6 ppm 0.512 meg/L
n 5			SAR	um - Fr Sa	7.9	Mark Comment and the second se
, ,	Α.	, ,				
			W. C. OO! WELL	CART TO SEE SEE STATE	<i>₹x</i> ₹ ৢ ⊃ ₹,1,4	

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.



out of state County

Laboratory Number: 231304 Customer Sample ID: SSB7 3-4

Crop Grown: BLUESTEM (GRAZING OR HAY)

### Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007

Printed on: 12/20/2007 Area Represented: 1 acres

Suffur   Sulfur   Strongly Alkaline   Conductivity   Sulfur   Strongly Alkaline   Strongly Alkaline   Calcium   Strongly Alkaline   Calcium   Sulfur   Sul	Crop Grown:	RFAFRIEN	I (GRAZ	ING OR H	AY)								
Conductivity	Analysis	Results	CL*	Units	ExLow	VLow Lov	v Mod	High	VHigh	Excess.			
Conductivity	pH:	8.8	(5.8)	ŭ '	Strongly	Alkaline	,	, , , * *		,	in i	· Ala .	· *
Phosphorus	Conductivity	445					c	DL*		Fei	tilizer Re	ecommer	nded
Phosphorus	Nitrate-N	· · · · · · · · · · · · · · · · · · ·	· (-)	ppm	· illi " "			i.,		" s <sub>2</sub> "	25 lbs 1	V/acre	72 y 77 y 77 y 77 y 77 y 77 y 77 y 77 y
Calcium	Phosphorus	5	(50)					i					
Calcium	Potassium	∞ <sub>1</sub> 133	(125)	ppm					8 S 3	. · ·	0 lbs ł	(20/acre	
Sodium	Calcium	1,639	(180)								0 lbs (	Ca/acre	
Sodium 719 (-) ppm	Magnesium	. 81		ppm						, , , ^	🕠 0 lbs N	/lg/acre	10 X
All Detailed Salinity Test (Saturated Paste Extract)  pH 8.4  Conductivity Sodium 359 ppm 15.614 meq/L Potassium Calcium 224 ppm 11.168 meq/L Magnesium 37 ppm 23.023 meq/L SAR 5.86	Sulfur	42	• •								0 lbs 5	S/acre	
Zinc Manganese Copper Boron Limestone Requirement  Detailed Salinity Test (Saturated Paste Extract)  pH  8.4  Conductivity Sodium 359 ppm 15.614 meq/L Potassium Calcium 224 ppm 11.168 meq/L Magnesium 37 ppm 3.023 meq/L SAR 5.86	and we're	~~~ (719 ·	~ <u>*</u> - (-)}.	- ppm 🔑	iiinii		unginit's	i	-, , -i		1200		, , , , , ,
Manganese Copper Boron Limestone Requirement  Detailed Salinity Test (Saturated Paste Extract)  pH  8.4  Conductivity Sodium 359 ppm 15.614 meq/L  Potassium Calcium 224 ppm 11.168 meq/L  Magnesium 37 ppm 3.023 meq/L  SAR 5.86	Iron	**			. 9 «~~/~.		~~;.···································	į .	~5~5,~~	w .		es le mili	
Copper Boron Limestone Requirement  Detailed Salinity Test (Saturated Paste Extract)  pH  8.4  Conductivity Sodium Sodium Potassium Calcium 224 ppm 11.168 meq/L Magnesium SAR  5.86		· · · · · · · · · · · · · · · · · · ·	, ,	***	1		` . · · · · · · · · · · · · · · · · · ·	1. 23	20 3×2 16 ×	~ * > =	wa Mai		, ·
Detailed Salinity Test (Saturated Paste Extract)   pH	Manganese	1, 12, 13			~ .		:	! -1 <sub>- የ</sub> ኤ		¥.2	· r&s ~		
Detailed Salinity Test (Saturated Paste Extract)   pH		, 1,7,7,7,1,7	, ,	~.** .		'a. l	3 - "	15.	r ·		. »:	,	, 1154 27
Detailed Salinity Test (Saturated Paste Extract)   pH	Boron		2.2 -45	5 nm n	Ass		, h,	i ,		is +			
pH       8.4         Conductivity       2:14 mmhos/cm         Sodium       359 ppm       15.614 meq/L         Potassium       70 ppm       1.802 meq/L         Calcium       224 ppm       11.168 meq/L         Magnesium       37 ppm       3.023 meq/L         SAR       5.86	Limestone Requiremen	ι,,,,		, ,,,		Dav. 1914.	.* ;	· '4			<b>0.00</b> tons	100ECCE	/acre
pH       8.4         Conductivity       2:14 mmhos/cm         Sodium       359 ppm       15.614 meq/L         Potassium       70 ppm       1.802 meq/L         Calcium       224 ppm       11.168 meq/L         Magnesium       37 ppm       3.023 meq/L         SAR       5.86					المُقَمِّناء	ما دَمْانمان	Tant/C		أمةمة مآ		Se Suma	·	iiki bib
Conductivity         2:14 mmhos/cm           Sodium         359 ppm         15.614 meq/L           Potassium         70 ppm         1.802 meq/L           Calcium         224 ppm         11.168 meq/L           Magnesium         37 ppm         3.023 meq/L           SAR         5.86	, , , , ,			`			\$ 1 E21:(3	aiuiaiei			I a. romar iteliki k		
Sodium   359 ppm   15.614 meq/L		, , ,					<b>.</b> 478.		0. <del>4</del>	mmhoc	omilio di	-,-2/:>=	NA 1775
Potassium Calcium 224 ppm 11.168 meq/L Magnesium 37 ppm 3.023 meq/L SAR 5.86	* / `	,			»	oqirim Sijiqqeqari	Y Talway Sal	ii wa Z	250	nnm	UIII A		
Calcium 224 ppm 11.168 meq/L  Magnesium 37 ppm 3.023 meq/L  SAR 5.86	, ,,			,	4 4 4 8 8	> . v	7.5. <b>3</b>	300073			78-36		
Magnesium 37 ppm 3.023 meq/L	,			·	46000° / 200.	00s							
SAR 5.86					M:	agnesium	ir in i				igi ing v		
	•						.XW.il	. Admida . f			Shitting is die 5	,	÷`!!od\#;
	,							13.88 h			b 40%,	, , , , , , , ,	· Lagra sug

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended



out of state County

Laboratory Number: 231305 Customer Sample ID: SSB7 4-5

Crop Grown: BLUESTEM (GRAZING OR HAY)

### Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Nitrate-N	P2O5/acre K20/acre
Conductivity	N/acre P205/acre K20/acre
Nitrate-N	N/acre P205/acre K20/acre
Phosphorus	P2O5/acre K20/acre
Potassium         139 (125)         ppm         անանանան անձան	K20/acre
Calcium         2,707 (180)         ppm	
Mägnesium 77 (50) ppm	<b>~</b> .
Sulfur 41 (13) ppm	Au 23
	Mg/acre
A M M M A M M M A M A M A M A M A M A M	w karata
Iron	
	^ * *
Manganese :	•
Boron	4005005
Limestone Requirement 10 2000 tons	s.100ECCE/acre
Detailed Salinity Test (Saturated Paste Extract)	
pH 8.3	Single 12 After Sin
Conductivity 1.60 mmhos/cm	
Sodium 244 ppm	10.620 meg/L
Potassium 29 ppm	0.730 meq/L
Calcium 298 ppm	14.845 meq/L
Magnesium 15 ppm	1.246 meq/L
SAR 3.74	and a secondary to second
SSP 38.70	(11 YEAR OF BACTOR T. (1888)

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.



out of state County

Laboratory Number: 231306 Customer Sample ID: SSB8 0-1

# **Soil Analysis Report**

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007

Area Represented: 1 acres

Crop Grown:	BLUESTEM	(GRAZII	NG OR H	AY)							
Analysis	Results	CL*	Units	ExLow	VLow Lov	w Mod	High	VHıgh E	xcess.		
pH∮∰. ÷÷ ÷ ÷	8.3	(5.8)	·- 32-3, -	✓ Mod. Ålk	aline	, L 12		~ ;		6 - 2 - 6	
Conductivity	574	(-)	umho/cm	Slight		С	L*		Fertiliz	er Recommen	ded
Nitrate-N		(-) , <sup>2</sup>	ppm		* :	a İspaniy	: " - "		, ` <sup></sup> . 30	<sup>∉</sup> lbs N/acre 🦂 🤅	. 25,25,790 
Phosphorus	· 4	(50)	ppm	11111111			1 1		50	lbs P2O5/acre	
Potassium	🎢 🍀 127 🖺	(125)	ppm 3	<sub>ં</sub> ભાગમું મા		HIO)ÎNÎÎNÂN	) And i	e Egge, a	£ _ ~ ~ ~ ~ ~ (	lbs K20/acre	na ifi
Calcium	3,300	(180)	ppm				•			lbs Ca/acre	
Magnesium	72	(50)	ppm 🧺	î ilinandî)		iiin minne	<b>)</b>	· · · · · · · · · · · · · · · · · · ·	) <u>;</u> , <u>;</u> , (	lbs Mg/acre	7 fet.
Sulfur	136	(13)	ppm		116101011111111111111111111111111111111					lbs S/acre	
Sodium	542	(-)	ppm	ីវីវិហិហិហ	nggmnjimat		;	alte est.	~		a is
Iron	~	** . *	v 4 *. *				1			~ */ # Yo	
Zinc 🔭 🔭	· Žė,	*** *		•	. 42	3 255	¦ :	, .	2.7		iai. Le litur i
Manganese		د	ng.3 /		. * ";	m* 6582	ا ا منگ ا				5
Copper		,		i t	1 %	. 18 ° ( 10 Japan	· ***:	,,,, ' <sub>j</sub> ~; #		v 14 - 15 1	^~ ' ;
Boron	٠ سا	Mag a		~6	/	1	i	,		. 1 -	
Limestone Requiremen	t * -1.//	**********	2 m 2 m	- 2	<u> </u>	1			· · · · 0.00	tons 100ECCE	acre _
							. *. *	L	ann, en de allematikas	NO	
			٠,		20 W. W. W. W. W. W. W. W. W. W. W. W. W.	Test (Sa	aturated	V X V 7 7-9 700	Extract)	Markania	kika ki
,				pH		na una ana ha		8.1		into the shall all	, 1710, Jakobi A. 1884,
*				A A W	nductivity	Y <sub>20</sub> , 13,, "			mmhös/cm	6 000 xx 20 00 00 00 00 00 00 00 00 00 00 00 00	radio e di il co
					dium		er i	304		S MOSTES SAMPLES A MARKET BANK	meq/L
` \			`	CALL NO SHOULD	tassium	4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	S. 30.		ppm 🗼 🎉 🍦		meq/L
		,			lcium	in respective	. Digita Mari	197			meq/L
`	^ <			*** ** ** ** ***	ignesium	Tel Midael		8 5 70	ppm	0:630	) meq/L
				SA SS∷∷				5.78 ₹54.99	* 2400B.\$	erija od do o	e. "iter I
<u> </u>			·		70000 400 / 7	<u> </u>		• 54.99	7 49 W A.	n Var discoult mis	.^ `'

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended



out of state County

Laboratory Number: 231307 Customer Sample ID: SSB8 1-2

### Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007

Area Represented: 1 acres

Crop Grown	: BLUESTEM	(GRAZIN		Y)								
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHıgh	Excess.		
pH	<b>8.6</b>	(5.8)	_Z + 2 * 3	Mod. All	kaline		1,300	,	- 43m	3,	*	
Conductivity	480		umho/cm	Slight			CL.			Fertiliz	er Recomm	ended
Nitrate-N			ppm,	<u>.</u>	<u> </u>	-27		₹.	3	30	lbs N/acre	· .
Phosphorus	6	(50)	ppm		I					45	lbs P2O5/ac	re
Potassium	4	(125)	ppm				n)řídianí þ		~~ ~	`	lbs K20/acre	
Calcium	3,128		ppm				i ini ini ini ini ini ini ini ini ini i				lbs Ca/acre	
" _"'' AND ' '	년소 《 4 90 <b>년</b>		ppm	· .a :	w v	• "	ngingana 🛊	•	,		lbs Mg/acre	r ji karita s
Sulfur	41	(13)	ppm				manand		***		lbs S/acre	
all ar r .r.	699	( <del>-</del> )	ppm		Hillin		MINIT	~ !	. M	: 2 3 7 7 7	"	ing '. y
Iron	#-^ #- p	· · · · · · · · · · · · · · · · · · ·		. ~			į	•	- " "	2 ***		·
Zinc ** ** ** ***	adda n rt A		, , , , , , , , , , , , , , , , , , ,	÷ . :		£.		<i>x</i>	A 17	, , <u>, , , , , , , , , , , , , , , , , </u>	7 . AN	a so he wil
Manganese		*				*	ا ا				, y 1,0 .	~
Copper		." (	· · · · · ·	, , ,	, ŝ <sup>2</sup> ,	:2 ° '	i: , , , , , , , , , , , , , , , , , , ,	* <sup>2</sup> / <sub>4</sub>	~ · ·	1 4 4 6		ž
Boron	A . a. wax didu			v n4	, 3- /	<i>y</i>	, .i	«			N. 8.	· ×
Limestone Requireme	nt 🐩 🔭 🤭	*) ]	<i>bry 1</i> 100 s	. Lines	. 3,	-	27,520		, all i	0.00	tons 100EC	CE/acre
				Ď-4-il	التعالث		r4/0-/		******			
,						inity :	est (Sa)	urated		e Extract)	M. karr . eks	irairii imi
7				pH	AAA ** . A	HVIII.		28 E/33	8.3 3 4	ວ 9 mmhos/cm		77 1177 8
					odium	uvity	- Frant 1		/ ~~~~~~~	N MINN V V		133 meg/L
						im :	iauij	M. 44' -		5 ppm 4 ppm		
•				. ,	ılcium		Maka	" andage.		4∘ppm <sub>Դ</sub> . 4 ppm	2 MM104 2 MM10440	<b>597</b> meg/L
										8 ppm 😭 🚡		
*				'A '	agiiga AR				7.3		.a	`≟*širied\r
, ,	>	,	, , , ,		SP	Marie .		7 7		17 77 4	"	
۸				*	100//			8	, A	·		W. W. wall on . gov.

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended



Report generated for: **ARCADIS - Mike Gates** 

5100 East Skelly Dr. Suite 1000 Tulsa, TX 74135

out of state County

Laboratory Number: 231309 Customer Sample ID: SSB8 2-3

Crop Grown: BLUESTEM (GRAZING OR HAY)

## **Soil Analysis Report**

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grow	AU: BLAE216	IVI (GRAZI	ING UK II/	41)								
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.		
pH	8.2	(5:8)	- , ~ **2 **	Mod. Alk	kaline		37.1	. â.	, """ "	, - & <sup>2</sup>		
Conductivity	580	(-)	umho/cm	Slight			CL	•			ertilizer Recommend	ed
Nitrate-N		(-)	ppm	IIII 3:4-1	/ -	,, , ~ °	``	**************************************	9. 	: 300	25 lbs N/acre	k, 200
Phosphorus	7	(50)	ppm	HIHHHH	HIII		i				45 lbs P2O5/acre	
Potassium	154	<b>(1<u>2</u>5</b> )	ppm 🧢	* juiithi	munnt	imini	dinimat	II	3 4	· 2	🍀 🥊 Îbs K20/acre	
Calcium	្រ។,5្		ppm								0 lbs Ca/acre	
Magnesium 🔭 🚡	. , , , , 5 81	્રિં (50) <sub>ક</sub>	∞ ppm	innonie:						: *	0 lbs Mg/acre	n les
Sulfur	76		bbw				eteetteette 🛊		III		0 lbs S/acre	
Sodium	856	6 ≩ (-) `	ppm	: juinijii		HİMM	ming", ;					1
Iron			gr.q	* * *	* = ~				s			/sc
Zinc	igad" - " .			1 10° ×		AA.	· , ;;	ž v				
Manganese	1			:		, ds. o	. !				8m2 - 8%	, , ,
Copper,	, #J. T.		17.90 h	13		777 7. ,	3,, ,		I	· · ·		10. X
Boron	r.	, , <u>, , , , , , , , , , , , , , , , , </u>				v	į		e a combi		ye	
Limestone Requiren	nent 🎎 🖰				- T		<u>*</u>	<u>*</u>	2X2-1	2/27	0.00 tons 100ECCE/ac	re
			,	· * *		-2000-	(***/ <u>**</u> **	ome, · · ·	2000 × 1	e manage page of the		78m - 54
1 11 11 11 11 11 11 11 11 11 11 11 11 1	,	*	* *			uith. I	est (Sa	turate	a Past	e Extra	Ct)	ik úď
		ė		p⊦	. 1,000-7000007				გ. გემ	U o~	STALICISMO ACERDAM FOS	
*				AA V AA A	onducti odium	Vity				8 mmho		
	•				otásšiu:		\$.000Y""		40	7 ppm	19.906 n 0.589 n	
	`				alcium	111777		W .i.				
		,				· · · · · · · · · · · · · · · · · · ·		<b>%</b> :	20 4. C.4	2 ppm	10.057 n 0:934 n	900000 Y// / A
		`>			agnesii AR	niii 🥳 🖟		T	8.4			iled/r
			`			J. Willer						5385.
×					. m. 17 Mb 1 7 7	*	" " " " " " " " " " " " " " " " " " "	55-35 (2000m	٠, ٧٧٠٨	<b>~</b> :`, .ad@/	Y Carlow NEW To be the Court To 19	alle"

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended



Report generated for: **ARCADIS - Mike Gates** 

5100 East Skelly Dr. Suite 1000 Tulsa, TX 74135

out of state County

Laboratory Number: 231310 Customer Sample ID: SSB8 3-4

# Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu Sample received on: 12/14/2007

Printed on: 12/20/2007 Area Represented: 1 acres

•	Grown: BLUESTEN	•		•							
Analysis	Results		Units	ExLow	VLow	Low	Mod	Hıgh	VHigh	Excess	
	8.4	(5.8)	- J.	*	·~ ~ ~ ~					(b) 236	
Conductivity	1,520	(-)	umho/cm	Moderate		. ~1	C	CL*		Fe	rtilizer Recommended
Nitrate-N	28		ppm	julianni	řinnerřiť		la v/m	,500 T	`		0 lbs N/acre
Phosphorus	. 0	(50)	ppm	tod a	28.07			į.			<b>55</b> lbs P2O5/acre
Potassium			<sub>č</sub> (¿ppm —	्र अपूर्णिएए					4.3		<b>20</b> lbs K20/acre
Calcium	29,209	(180)	ppm					MINIMITAL		. m s? * *	0 lbs Ca/acre
- "	205		¦ ⊰ppm _	11111111111							0 lbs Mg/acre
Sulfur	150	(13)	ppm					<b>þ</b> imminnt		·	0 lbs S/acre
	j, j, 1,873	(-)	ppm		mm			#!!!!!!	^ ~ =		
Iron	* ****	*	, , , , , ,			· 1	. ,	1 .75.22	v. ,	• ~~ #!	777
	The same of the same	r##,4,	, '	, i · · · ·	^~,	100	. ·		k		
Manganese	water to the control of the control			• , «	*.a.*: •			i L,,,,,,,,		3 4	3 26 / _ 00 00
" " " " "		,	*	:	·	- A	·	1 3 ;	ì. 🚈	,	
Boron	juirëments 🕳 🕍 🔝	, ,,	~	, ne 3	A N	٠,5°	ď^ /	i -	. « ~	* . * .	
Limestone Req	<u>uirements (* 16. – 27</u>	· ,,,, ·		<u>:                                    </u>		6 m. x	2		~ 653	_ ( 0	0.00 tons 100ECCE/acre
** .			. ,		:3765III		- 2476	7	¥6	C# 1,000	
	<b>\</b>		·			nity	est (29	aturate		e Extrac	
			×	pH Ca			11 4 A	WW. **	8.	•	
			,	Co	onauct odium	ivity.	.2 <b>(200</b> 0)	- 20			/cm
				Po			34(	<b>₩</b> ₩ / .::^		3 ppm	
1					ilcium		- <del>(1</del> )				0.431 meq/L
	*				ilcium ignesi		/y.m	- 10 m		6 ppm	
			**	SA	W/- /	iiii.∕⊹∶	4 I	. C <b>in</b> ii	~ ~ ~~~~ ~~~~~	5 ppm	1.193 meg/L
					NK SP	78.5 ~ ^	\$2.785	- 3550 TV	16.6	u 5	
`	is the point which no add	<del>`</del>									

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down.



out of state County

Laboratory Number: 231311 Customer Sample ID: SSB8 4-5

#### **Soil Analysis Report**

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Sample received on: 12/14/2007

Visit our website: http://soiltesting.tamu.edu

Printed on: 12/20/2007 Area Represented: 1 acres

Crop G	rown: BLUESTE <b>N</b>	I (GRAZ	ING OR H	AY)							
Analysis	Results		Units	ExLow	VLow	Low	Mod	Hıgh	VHigh	Excess	
pH .	8.5	~ (5.8)	1	Mod. All	caline 🔻		~ ` `	.3			1,1,1,1
Conductivity	1,330	(-)	umho/cm	Moderat	е		CI	L•		Fe	rtilizer Recommended
Nitrate-N	29	(-)	ppm 🦂		ijeli jijijel (e				,	•	0 lbs N/acre
Phosphorus	0	(50)	ppm				_	, i			55 lbs P2O5/acre
Potassium.	69	(125)	ppm	į įmminija	iiijiinnų	miniii;	ار . ، آن " ا " »		· y . , ·	*/ **	50 lbs K20/acre
Calcium	30,675	(180)	ppm	,					11		0 lbs Ca/acre
Magnesium	199	(50)	ppm								0 lbs Mg/acre
Sulfur	160	(13)	ppm	11111111111	HIHHHHHH			<b>†</b> IIIIIIIIII			0 lbs S/acre
Şodium .			ppm		maini	<u>Minnin</u>	HHHIIIII (			iê i	
Iron	w	**	_a, w	, ,,,,,		, ~ .	,			2 20 00 2000	
Zinci, 📜 👢	4,,, 174	~ ^ ~ ~ ~ ~		s'	Šala "		, , , , , , , , , , , , , , , , , , ,	,	`.,1	r ya y	
Manganese	a- 3			* ~	•			 	1n 8		4. X.F. 3 3
Copper		i jak		3	·i:	., ,, ,	: .!		. Figur	2	
Boron	w ****	b				,		i	1 . 5.		_ * vv * 6x 3345 3
Limestone Requi	rement 💮 🗼 🧢	12	n. 41 m	***. · · · · · · · · · · · · · · · · · ·	~%~ ×&	- k 2	· ~~	· / ,	1 2 S	Lu "s	0.00 tons 100ECCE/acre
			7	_ 2000 2.0	~~	87.87.1.	***	., - ::2	****** */*	n Linguaga	
	1114	"		Detail	v 20000mb, 70 50	nity Te	est (Sa	iturate			1)
				ph		77.73	: Zz::::		8.0		
` ,`			į.		onducti	vity :		· 7/9/10/	10.2	u mmnos	Vom 150
,					odium	79.800	7000 S	ille ali		1 ppm	<b>52.694</b> meq/L
`	, ,	, ,	*	2007 1674	otassiu	W.		Ni Ca	2		0.562 meq/L
	,				alcium agnesii		. 778	n - ir a sadah	23	7 ppm 2 ppm	26.777 meq/L
`		*	`	. 00 0000000000000000000000000000000000		um	Mar 1				1.829 meq/L
				S/ - ₹/SS	AR Sp	1,000	W. 247	V	13.9: `∞ 64.3	3 7 ∞ 🦚	
1			<u> </u>		J	Sex serie	n X > an				

<sup>\*</sup>CL=Cntical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water.

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down..



out of state County

Laboratory Number: 231312 Customer Sample ID: DSB1 0-1

Crop Grown: BLUESTEM (GRAZING OR HAY)

### Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu
Sample received on: 12/14/2007

Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown:	PLUESIEN	I (GRAZ		AT)							
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess	
pH,	8.5	(5.8)	- 35	Mod. All	caline						, , , , , , , , , , , , , , , , , , ,
Conductivity	171	(-)	umho/cm	None			C	L*		Fe	rtilizer Recommended
Nitrate-N	11.	(-) (-)	. ppm - ,	. maanni	l - 🛬	54 4	1-	^			15 lbs N/acre
Phosphorus	5	(50)	ppm	1111111111	_			)   			<b>50</b> lbs P2O5/acre
Potassium	269	(125)	ppm	immuni, 🖟	müniţ	HIIIIIIII	)iiimini	him ""			0 lbs K20/acre
Calcium	4,270	(180)	ppm		111111111111			•			0 lbs Ca/acre
Magnesium 🔻 📑	128	(50)	ppm"	~ :		A W *V	•			: " - ;	0 lbs Mg/acre
Sulfur	21	(13)	ppm					71111			0 lbs S/acre
Sodium , , ,	<sup>22</sup> 170	( <b>ક</b> ્રેફે <b>(≘)</b> ે	]: ppm			III ^*~	·riii ·	28	i 9" , , , , , , , , , , , , , , , , , ,		Mark Assistant
Iron	,		1.00 ×								
Zinc ( ****	i victible	,	~	#\" .A.	ronati.	(MC) 2	·	25.	° o Alas	(144) No. (1	
Manganese		10 m	,			· 4 .30^	/ 18 m	ا ا <sub>یش</sub> ،		i arma	
Copper		Trades	·	i "	· in :	2*	\$1\$		. ? " ' "	, r spirging, "	
Boron Limestone Requirement			> 5	٠ ٠,٠	· varior _	363 CA	3 de // 1/2 1	I - N.A.H	(Lubbo	83° % (24)	0.00 tons 100ECCE/ačře
Limestone Requirement		****	× ; ½ · ′	** ,		¥ .	Α	~ ~~ ~~ ~.	C 8 -441 - 7	, am	0.00. (OIIS 100ECCE/acie *
,	, ,	*	,	Detail	ed Sali	nity T	est (Sa	iturato	d Paet	e Extrac	
,	A.			lq	// M.		( <del>-</del>		a . us., 8.	- **	
\$		•	,		onduct	ivitv.				7 mmhos	vcm
<b>S</b>				40 'A 0 00000000.00	dium	<b>.</b> .		7 7 7 7 67 6		1 ppm	1.799 meg/L
				Po	otassiu	m		Cros			0.759 meg/L
			`	4000A A 1	alcium	, , , , , ,		. ,		3 ppm	4.129 meq/L
· · · · · · · · · · · · · · · · · · ·				. 3. <b>3M</b>	agnesi	um 🖓				5 ppm	<b>0.446</b> meg/L
				S	AR			AV-11 100000300000000000000000000000000000	1.1	9	renome now are no remomenta. In 1 year of the discharge held the C 2005 A sellion. Het and discharge leading t
,	•	,	×+	", Š	SP 💮		<b>V</b>		25.2	2 ***	

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended



out of state County

**Laboratory Number: 231313** Customer Sample ID: DSB1 1-2

# Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007

Area Represented: 1 acres

Crop Grown: B		I (GRAZ	ING OK HA	AY)						
Analysis	Results	CL*	Units	ExLow	VLow L	.ow N	Aod Hig	h VHigh	Excess.	
pH 🦺 🔭 🚉	8.7	(5.8)	经常是国家的	Strongly	Alkaline	3 2- 3	* ; %-	t i lel	45°,	
Conductivity	187	(-)	umho/cm	None			CL*		F	ertilizer Recommended
Nitrate-N	5	(-)	ppm 🔭	om de		· :	: · · ·		: `?':Fx	30 lbs N/acre
Phosphorus	4	(50)	ppm				i			<b>50</b> lbs P2O5/acre
Potassium	137	· (125)	· ppm	Íniúnni	i <u>iiimmatin</u>	HIHH)JH	miib 🐪	, " · ½, « 1.		0.lbs K20/acre
Calcium	4,084	(180)	ppm				and waller	, .		0 lbs Ca/acre
Magnesium	100		ppm		IIHHUUU	··· 300	w	ivi udo	1 ° ° ~	ஆ <b>்.0</b> . lbs Mg/acre
Sulfur	22	(13)	ppm		HILLIANIA (III		muğim	~ 3	. Y.	0 lbs S/acre
Sodium 🔆 🔭	368	<b>(-)</b>	ppm 🗧 🖁		nimijüin		i	•	**	
Iron	of an "		Way.		** ~ .		į.		• "	
	J.	~~ ******	l million.			13.7	'.'	• * "	où pe	
Manganese	, * ×	- 1450 - 1230	18°		~		1	35~ • %.1 ¿		. Y Not 200 (1) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Copper	د د هر پ <sup>و</sup>			:i	" ·"	· : "	i T	F: 40,2	Jun "	
Boron	·		,	, , , •		**	i			
Limestone Requirement	, , , , , , , , , , , , , , , , , , ,	, ,	* "*,"	- 9 AZ	* 32 .	÷ <u>.</u>	A # *	. , î.	` ′	0.00 tons 100ECCE/acre
,				7 vii viinili	444457 4 54 57 5°	. Trans	. <i>6</i> 5 (. 55	*****	1977. – 1981. 1.	ingenia makakangganan ni ing galang bila
·		*	,			ty il es	t (Satura	ited Pas		Ct)
				ph	600 A A 600	<u>.</u>	V	_	.2 	air
`				30 X	nductiv	ity .	1 / 1		0 mmho	
,				4 4 .94.	dium	. * .5* *	,** t	. N	4 ppm	
×		4		~ ~ ~ ~ ~ ~ ~ · · · · · · · · · · · · ·	otassium	SAMA.	: aliam			0.232 meq/L
	× .				lcium		v .x		)7 ppm	
	` ,	×		* < 67 0 ~00mg	ignesiu	\>\?\			5 ppm	0.386 meq/L
,			,		\R ≿Ď <sup>©</sup> ≒®	my /. w	nist villanst sam	1.9 29.1		
`	· · · · · ·							itu) io roos		

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.



Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

out of state County

Laboratory Number: 231314 Customer Sample ID: DSB1 2-3

Crop Grown: BLUESTEM (GRAZING OR HAY)

Crop Growi	n: BLUESTEI	M (GRAZ	ING OR HA	AY)					
Analysis	Results	CL*	Units	ExLow \	/Low Low			High Excess	
pH';		(5.8)		Mod. Alkali	ne .	، پاکستان پاکستان	.,	أعربُ عَيْ	
Conductivity	603		umho/cm	Slight					ertilizer Recommended
Nitrate-N	747 12 2 3 3	ږ <b> (-)</b> ړ	ppm	`.II	,	٠/إِنْ الْحَادِّةِ , c	:		30 lbs N/acre
				II			;		50 lbs P2O5/acre
Phosphorus Potassium		i ∞ (125) <sub>⊰</sub>	"Ĵppm						<b>25</b> lbs K20/acre
Calcium		(180)							0 lbs Ca/acre
Magnesium 📆 🧎		(50)	ppm	immini	1800000		<b>Q</b> II : ,		0 lbs Mg/acre
Sulfur	297		bbw				Pallanning	111111	0 lbs S/acre
Sodium,	, 710	, F73 (-1) "	: ppm	<b>AND AND ADDRESS</b>	ığığışıtlı				Action to the second of the
Iron Zinc	200 m	*		: :	.1	<b>~•</b>	I I		" " " " " " " " " " " " " " " " " " "
Zinc	, , , , , , , , , , , , , , , , , , ,	The sale of	· · · / · · · · · · · · · · · · · ·	8 , 188	in "	•	logari-	**: ,	
Manganese Copper San San San San San San San San San San	,	- sulta		:	A 45 8	`_**		* *	
Boron	•	200	y *,	, , , , , , , , , , , , , , , , , , ,		,	] ^	′ 1	hand the state of
Limestone Requireme	ent ( <u></u>	* * *	3 ,4,4 1	4, 1, 4, 2	. Selikala		i		<b>0.00</b> tons 100ECCE/acre∞ .
4.				Datailad	Calinity	Foot /S		)	ct)
·	. ^ _			,Detaileu pH	Sammirh?	i eži (se	arini arê û j	asie∉Extra 8.0	Cy
.,					ductivity				s/cm
,				Sodi		î wî		379 ppm	
% · · · ·						×36			0.389 meq/L
*		, ,		Calc	ium			524 nnm	26 170 meg/l
	s .		ż	Mag	nesium	" 		14 ppm	1.172 meq/L
`				SAR				4.46	
_	` `			SSP			W X '	37.28	

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.



out of state County

Laboratory Number: 231315 Customer Sample ID: DSB1 3-4

Crop Grown: BLUESTEM (GRAZING OR HAY)

### Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown	1: BLUESTEN	i (GRAZ	ING OR HA	AY)										
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Exces	s.			
pH j. Taylor in		(5.8)	, <del>-</del> .	Mod. All	kaline	, ,	. " "	, ,		. ,	25 75	. v	, , ,	^47
Conductivity	3,100	(-)	umho/cm	V. High			С	L*			Fertiliz	er Recon	nmend	ed
Nitrate-N	38,	<u> </u>	ppm	`Manani			HIII "	!'\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	~ ^ ^			lbs N/acr	e, 👡 ِ	
Phosphorus	1	(50)	ppm	ı				;		•	55	lbs P205	acre/	*- *-
Potassium	110	· (125)	ppm	* minimi	İMI	mminn)	IIIII'	l L .: * * :	, " ",		. 10	lbs K20/a	cre	2.23
Calcium	30,095	(180)	ppm								0	lbs Ca/ac	ге	
Magnesium 🦠 🤻 🔥	247	(50)	ppm			İNTANTI				٠ ، , 	₽¥ X Ô	lbs Mg/ad	ге	mg; 1 , _^
Sulfur	215	(13)	ppm								0	lbs S/acr	9	
Södjum 🚊 🚉 🧦	3,249	( <b>-)</b>	, ppm	- ijaninija	HİH MUQLI	įdininių	iillijiiiji	Jiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	<b>II</b> . 3:		w ~		x #8 ,	\$513B
Iron		***	······································					! !	A Y					
Zinc	ae reágio da	\$ 25 <sub>44</sub>	***			- 14 15	, ,	] 2 ~~ · ]		raji <sup>n</sup> :		· · · · · · · · · · · · · · · · · · ·	9.52 B	- " - " · ·
Manganese								l 						
Copper	. **		·!de/da.		3,4				300 m					, , , , , ,
Boron				2 5 3	~			l I						
Limestone Requireme	ent, 🦸 🧓 🤕			*	\$		A set 5	2 M	~ 20 r L	~~~	0.00	tons 1,001	ECCE/ac	re
								** ** **		****				
i		` /		Detail		nity Te	est (Sa	turate	d Past	e Exti	act)			
				pŀ	1	, a		- 20000 00/000 VA	7.		·*************************************			0 - TAN - TAN - TAN - AN
` '				C	onduct	ivity			17.8	8 mm	nos/cm		(A * * * * * * * * * * * * * * * * * * *	
					odium		*******		211	<b>7</b> ppm	1	9	<b>2.139</b> n	neq/L
`						ıw 👡					Lay V		0.954 <sub>.n</sub>	neq/L
					alcium		Y., 2 898 - 44.	* /^		6 ppm		7.00 M 7.7 MARKANINA	<b>6.682</b> n	w
`				* *****	*********	um		4 3 22	6		المراث ا		5.492 г	neq/L
	,				AR	46.7 NE 1917 . S.A.	90007 NOS - *		16.5			C 300 ~ 70 .000000	* * *	
· · · · · · · · · · · · · · · · · · ·			*	SS	SP			· Q. Ç.	59.3	4	-46			

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water.

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down..



Tulsa, TX 74135

out of state County

Laboratory Number: 231316 Customer Sample ID: DSB1 4-5

# Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007

Area Represented: 1 acres

Crop Growi	n: BLUESTEM	I (GRAZI	NG OK HA	AY)						
Analysis	Results	CL*	Units	ExLow	VLow Lo	ow Mo	d High	VHıgh	Excess.	
pH ^	8.3	(5.8)		Mod. Alk	aline		/ ?/	·		
Conductivity	3,720	(-)	umho/cm	V. High			CL*		Fertilizer	Recommended
Nitrate-N	22	(-) <u>*</u>	ppm	nanigia	mingüldniş	III :	<b>:</b> .	· Prile :	O lb	s N/acre
Phosphorus	1	(50)	ppm	1			ľ		55 lb	s P2O5/acre
Potassium	ે <sup>ત</sup> ે, <sub>ક</sub> ું 99"	(125)	ppm	inininini:	uğumıtı		- (1)40倍 - 1		. <b>20</b> lb	s K20/acre
Calcium	30,128	(180)	ppm					•	0 lb	s Ca/acre
Magnesium	288	~ (50 <u>)</u>	ppm		įminnuninin		uu <b>b</b> iidi 🖺	:	· " O l̃b	s Mg/acre
Sulfur	187	(13)	ppm						<b>0</b> lb	s S/acre
Sodium	3,231	(-) <u>.</u>	ppm		HHUUUUİNÜR	Hijidilli	mánnná	W. E.		*
Iron	V W WWW + hand				0Y0 0-00	~ ~	í	#1 #		
Zinc.		€£ 6a≿.		: , , , , , ,		. : ^ _ (1.18)	,		. 43	
Manganese			_				i			
Copper		****	in in the second	· ; · · ·	:	*	į. 23	K4	Mill that	
Boron	/ %	~**			> "-	00 _my 1 **	i	. ,		•
Limestone Requireme	ent 🐩 🛣 🚉		<u> </u>	,. >.,		*2. *	<u> </u>	- 37 L	0.00 to	ns 100ECCE/acre
				· ~~~				10.1 1000 JB4000, 2 95 >	· · · · · · · · · · · · · · · · · · ·	
* * * * * * * * * * * * * * * * * * * *	× *	1	,	Detaile	d Salinit	y Test	(Saturate	d Past	Extract)	
,				pΗ			esante. Totalonia	7.	-	And a section of the section of
*			` .			tý			8 mmhos/cm	ik zu is ikino i saki
, ,			,		dium	D-4 886 v v	11330078		4 ppm	91.568 meq/L
,	,			*	tassium	K.Y.A.				1.075 meq/L
					lcium	1 .e. X		119	2 ppm	<b>59.467</b> meq/L
		, `		** ******	gnesiun	) · ``	***************************************		* ** ***********	6.379 meq/L
				SA		* * **	~~~ >===	15.9	6 8. ∵ \$\$\$\$\$\$	E. akh Sar ak a China e ch
	<u> </u>	8.5	•••	∯ SS	۰۲ .			`* 31kt	D	

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down...



Tulsa, TX 74135

345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone)

**Soil Analysis Report** 

979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

out of state County

Laboratory Number: 231317 Customer Sample ID: DSB1 5-6

Crop Grown: BLUESTEM (GRAZING OR HAY)

(	rop Grown	BLOESIE	II (GRAZING	OK HAT)				
Analysis		Results	CL* L	Inits ExLow	VLow Low	Mod High	VHigh Exces	s
рН		8.3	(5.8)	Mod. A	lkaline		e en sant	
Conductiv	ity	5,100	(-) um	ho/cm V. High		CL*		Fertilizer Recommended
Nitrate-N		16	(-)	ppm	(દુંદા <u>દાલ</u>			5 lbs N/acre
Phosphoru	ıs	0	(50)	ppm		; ;		<b>55</b> lbs P2O5/acre
Potassium	rėjų žeių	74)	(125) 🔭 🦿	ppm 👵 [IIIIIIIi	itimini)mimini			្រុំ <b>45</b> lbs K20/acre
Calcium		30,793	(180)		turimininininini		•	0 lbs Ca/acre
Magnesiur	n' i Ta.	307,	· `(50) 🐃 `	ppm : IIIIIIII	(minailainini	ginningani.		0 lbs Mg/acre
Sulfur		156	(13)					0 lbs S/acre
Sodium		4,210	(-)	ppm jillillili	magggan gijaman	opinio pinio	HOME AND THE	
iron								
Zinc	· ~ .		in in			, "iz   ^	i i i i i i i i i i i i i i i i i i i	
Manganes	e į						4	
Copper	.D. 144	i i Argar .	, , , ,	127 m			:	
Boron	v			(h	* 10 .3 33			
Limestone	Requireme	<u>nt</u> 💮 🔻 🚉	ž.			~ ~ ~	·	0.00 tons 100ECCE/acre
				** * ***	* / 200000000000000000000000000000000000	· > 2004 · 2002224200000000000	er and entering	and a state of the control of the co
v *	, *	, , ,	*			Test (Satura	ed Paste Ext	act)
					H		7.8	
,	`			C-00 - V00 - V	onductivity		29.20 mm	
		,			odium	,c, 8 · · · · · · · · · · · · · · · · · ·	3507 ppm	
	`	× .			otassium	r ditti karan Raman	. 57 ppm	
					alcium	357° 7894.7996 (CXXXXII)	23 ppm	2 2 2 N
1	**	•	*	. 10001000000000	lagnesium	" " " " " " " " " " " " " " " " " " "	149 ppn	12.258 meq/L-3
1					AR	+ 1616 *	58.99	
			× ×	, S	SP	ľæk ¢ ∽á	91.14	

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down.



out of state County

**Laboratory Number: 231318 Customer Sample ID: DSB1 6-8** 

# Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown	: BLUESTEN	I (GRAZ	ING OR H	AY)									
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHıgh	Excess.			
pH.	** ` ; <b>8.3</b>	´(5:8) <sup></sup>		Mod. Ali	(aline	8 ^^*		\$ *	4 % 55° 209	7 4 3 L	,g-Ž, 4' sê	a salam	
Conductivity	4,190	(-)	umho/cm	V. High			CL	•			ilizer Reco	mmend	led
Nitrate-N	3	(-)	ppm			* * .			Ţ.	Chan, m my	30 lbs N/ac	re 🤼	~, ~
Phosphorus	1	(50)	ppm	Ī	•		1	·			<b>55</b> lbs P20		Ť
Potassium 🦠 📑	· , 🤃 " 79,	(125)	ppm		ennani(n	(mm)				. ·	<b>40</b> lbs K20	acre	te: 🗎
Calcium	29,743	(180)	ppm		innanaina Maranaina					* *	0 lbs Ca/a		* *
Magnesium 👢 -	283	(50)	ppm	· Juguru	minemonija		dinnii)	goigt 🛊 🗄			0 lbs Mg/a	acre	TAKE.
Sulfur	133	(13)	ppm								0 lbs S/ac		
Sodium	4,007	(-)	ppm		inijarinijaji	i i i i i i i i i i i i i i i i i i i	anima				* . *		
Iron							1						
Zinc .	Mary Ash ().	~ ~ * * ^		1.4	À	· 1			1,4			re might	48,17
Manganese							į						, ,
Copper 🔭 🗎	~ (xa) }	~ '	* **	: :	Ť	:	1 25		,**2	)	j., 412. j		·" (
Boron				_									
Limestone Requireme	nt 🖖 🔑	35-181.	? #15. mr - 4.5	e '.	z! **.	media J	. A -80	4 11.	· /// , s. )	r _ r≥ <sup>12</sup> (	.00 tons 10	0ECCE/a	cre
· · · · · ·	5	`	,	Detaile	ed Salin	ity Te	est (Sa	turated	l Paste	Extract)			
				pŀ					7.8	-			
· · · · · · · · · · · · · · · · · · ·	· · · · ·			,,;;;,Cç	onductiv	ity 🚉			21.10	) mmhòs/d	m	Marie Sarage	74 94
				Sc	dium				262	7 ppm		14.310	
* , * ,	* *	`		Pc	tassiun	1 Î		22.3	3	7 ppm 📑		0.955	meq/L 🖫
				40 0 10	lcium			WA ANA A AV. W		2 ppm		53.513	meq/L
0				S. M	agnesiu	m 🕄		* 5. * * . * . * . * . * . * . * . * . *	84	<b>\$</b> ppm		6.870	meq/L
				SA	AR .				20.80				
	× .		25	r∮ ∛ SS	SP	POORING .		14 mis	65.0	3		2.70.300	

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water. Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down...



out of state County

Laboratory Number: 231319 Customer Sample ID: DSB1 8-10

Crop Grown: BLUESTEM (GRAZING OR HAY)

## Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown:	RF0F21FM	(GRAZ	ING OR HA	AY)							
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	Hıgh	VHigh	Excess.	
pH: ###	8.6	(5.8)	The Sail	₹Mod. Al	lkaline	: A Ž	3-73	18 197	ái m	graph in a	K Sala Sala Sala Sala Sala Sala Sala Sal
Conductivity	2,120	(-)	umho/cm	High	* **	AMA	CI	L*			ilizer Recommended
Nitrate-N		~~~(-) <sub>_</sub>	ppm	. innn	· ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` `		: 4		on one	· 	25 lbs N/acre
Phosphorus	1	(50)	ppm	ı				i ,		•	<b>55</b> lbs P2O5/acre
Potassium	80	∛(125).	ppm	į millini	(48081¥61844)  4808146141			l'.  /		·	40 lbs K20/acre
Calcium	25,962	(180)	ppm	1611111111					<b>  </b>	w .	0 lbs Ca/acre
Magnesium	197	(50)	.∞ <b>ppm</b>							i, 24	<b>0</b> lbs Mg/acre
Sulfur	113	(13)	ppm		HIIIIHII			) ( ) ( ) ( ) ( ) ( ) ( )	1111111		0 lbs S/acre
Sodium	2,249	( <del>-</del> ) )	ppm		Higi į Pičy Pri				i se la	- 51, '~ <u>k</u>	
Iron		Ang.	~			**.		į		~	/* 88% * / * * * * * * * * * * * * * * * * *
Zinc	1. 2.	, ,	~ · · · · · ·	· : z	3	44 .4	., sĝ	หารไกลใ	Îr.	· Marchard	
Manganese	-a'			,		. ,.	ا ا س <sub>م م</sub> ا	 	ž >> 20	An North	« · · · · · · · · · · · · · · · · · · ·
Copper			** ** *				11 *		. ~	7,00	'*s
Boron		. »	~~ * *	4	>A.	. *	,	1		, , , ; <b>,</b> ,	:00° tons 100ECCE/acre
Limestone Requiremen	1 <b>t</b>	.*					1 'r '#		~	″ " 0	:00 tons 100ECCE/acre
				Dotail	lad Gali	niń. T		مُنْ يَحْدُ	Ä*Däčt	NEvera at	
,		,	,	petali		,	<u> غور آر</u> م	iturate	u rasu 8.0	_	
	,		/		onduc	ivity	· T. W.		No. M. Janes 2000, Art	7 mmhos/c	m / 2. Colored
<b>,</b> ,				2/00///0007 /	odium	reis 1 sa Mille -	`~~~~	**, ; * *		1 ppm	66.175 meq/L
,			*			ım	678 783	i.	2	8 ppm	0:719 meg/L
Ì				C	alcium				63	8 ppm	31.813 meg/L
· · · · · · · · · · · · · · · · · · ·				M	lagnesi	um				7 ppm	3.059 meg/L
Ì				S	AR		ms .286.25 x 286	Saturallia, Tall annolaean	15.8		V A W A W A W A W A W A W A W A W A W A
			,	ຼື, S	SP	109 101 2 - 1	, ., .»	"î. 	65.0	3	

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water.

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down..



out of state County

Laboratory Number: 231320 Customer Sample ID: DSB1 10-12

Crop Grown: BLUESTEM (GRAZING OR HAY)

# Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Gro	wn: BLUESTEM	I (GRAZ	ING UR F	1AY)									
Analysis	Results	CL*	Units	ExLow	VLow	Low M	lod Hi	gh Vi	ligh E	xcess.			
рН · ** * ** ;;;	8.6	(5.8)	//10%)	Mod. Alk	kaline 🦼	- 37	, 1			-*,*	ding to	z in in	,
Conductivity	2,270	(-)	umho/cm				CL*			Fe		ecomme	
Nitrate-N	- \$ \$ \$ \tag{2} \tag{3}	( <del>-</del> );-	ppm						~ ~ :		<b>30</b> lbs	N/acre	. :
Phosphorus	1	(50)	ppm	ıı .			i				<b>50</b> lbs	P2O5/acre	
Potassium	**	ै(125)	:∄ppm^⊣	' <sub>അ</sub> (100000)					,	£131.0	√45 lbs	K20/acre <sup></sup>	, .
Calcium	15,735	(180)	ppm		mmmi						0 lbs	Ca/acre	
Magnesium ^	138.	.,.	°ppm		-46 3 Y	18mm " .		a. ~ a.*	`, ``:	Aseğ	- 0 lbs	Mg/acre	
Sulfur	35	(13)	ppm		munini				***	100	0 lbs	S/acre	
Sodium: 🌼 🛴	2,660	, 🖫 ( <b>-)</b>	ppm :		iinniinii (u	Ä	101010	inin	· ~:&	Mir	.^		* *
Iron Zinc **** *** *** ***********************		3-1 y.		: ::::::::::::::::::::::::::::::::::::	a, a:	·	- I		, , ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1- \$- <sup>1</sup>	* # - "		
Manganese								•	•		,	**	
Copper	~ ·			: :		·		. Ľá	r Ki				
Boron							I I						
Limestone Require	ment 18 - 17 (1)	~ ~ k . ~ .	F 1. 12		· · · · · · · · · · · · · · · · · · ·	,~= z · ^	\$		e There's	, , , , , , , , , , , , , , , , , , ,	0.00 tons	100ECCE	/acre
,	4			Detaile	ed Salin	itv Tesi	t (Satui	ated P	aste l	Extract		. Sec. 12.30	
*				p⊦		~~ <b>~</b> a waar wa	06 °	<.a	8.3		Minerality (%)		· >20 ~80
	•			Co	onductiv	vity			2.76	mmhos	cm		
					odium	×××× = /x ::	7. T. 2027 - 805. 1. 7.		1426	maa		62.06	<b>2</b> mea/L
1			′ ′	Po	otassiur	n * T	Silv.	Spirite re	:32	ppm		0.83	1 meq/L
,				Ca	alcium				404	nnm		20 18	4 mea/l
				Ma	agnesiu	m 🧸	engeriere Contra ac	Same 3	39	ppm		3.16	8;meq/L
				SA	AR .			1	18.16				
			,	SS	SP 🚆				71.96		\$40 G B		· · · · · · · · · · · · · · · · · · ·

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

**Conductivity:** Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water. **Nitrogen** Apply an additional 30 ibs/A of nitrogen prior to each four to six week graze down.



out of state County

Laboratory Number: 231321 Customer Sample ID: DSB1 12-14

Crop Grown: BLUESTEM (GRAZING OR HAY)

## **Soil Analysis Report**

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007

Area Represented: 1 acres

Crop Gr	own: BLUESTEM (G					
Analysis	Results C		ow VLow Low		VHigh Excess.	
pH 📲 🛒 🙀	8.5 (5	5.8) 🦫 🦂 🧖 Mod.	. Alkaline	Ny ST		and the second of the second o
Conductivity	3,060	(-) umho/cm V. Hi	igh	CL*	Fertili	zer Recommended
Nitrate-N	3,060	(-) ppm 🐩 IIIII		la Arimii	2	5 lbs N/acre
Phosphorus	0 (	50) ppm		i	5	5 lbs P2O5/acre
Potassium	-\$-\$ <sup>1</sup> 41 -¥2*€ . 378 (1	25) - ∞ ppm⊋ → ∭∭	HTTT I BELLEVILLE I LE LE LE LE LE LE LE LE LE LE LE LE LE	Nggaran da ada®i	4	0 lbs K20/acre
Calcium	27,534 (1	80) ppm	(1800) (181818181818 <u>8</u>			0 lbs Ca/acre
Magnesium 2	27,534 (1	50) ppm illill	ının İnnerna in İmailia İ	Building Cont.	e in laka	0 lbs Mg/acre
Sulfur	91 ( <b>2,</b> 981,4	(13) ppm IIIIII	konninnen kuntu kulunin kii	gwillini þalfalla	inn	0 lbs S/acre
Sodium	2,981	-(-),, bbtw, illilli	nragennunetuiine	Hermann Britanin H		
Iron	3404 W A Y			, i	* . * . * . * . *	· · · · · · · · · · · · · · · · · · ·
Manganese			•	1	, , , , , , , , ,	* 3
Copper		ia - a bhad	Miliana A		San San	o a a a a a a a a a a a a a a a a a a a
Boron	····			i		. */ . \$ ^ <^ a 1
Limestone Requir	rement ************************************	Allen Santa Com		40		0 tons,100ECCE/acre
			Z::29 6212427		# <b>F</b>	
* , '	* *	, Dei		est (Saturated	Paste Extract)	
		***	pH Conductivity		8.0	
		váiscála!	Sodium	- Andrew Called Street		
	*	, ame			1044 ppm	80.241 meq/L 0.846 meq/L
		· · · · · · · · · · · · · · · · · · ·	- Magnocium :		739 ppm	37.896 meq/L 3.873 meq/L
1	*	, ************************************	SAR	T. C. W. C. C. Land	47 ppm 2 47 17.56	A.C. Caracian Solor Somed/L
	, · ·					
<del></del>	*		~ • v . « « « « « « « « « « « « « « « « « «	1 3 1 1 4 th 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	29-7	, 35 (ans 1 m) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down.



out of state County

Laboratory Number: 231322 Customer Sample ID: DSB1 14-16

## Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown	n: BLUESTEN	I (GRAZ	ING OR H	AY)								
Analysis	Results	CL*	Units	ExLow	VLow L	ow Mod	High	VHigh	Excess			
pH "F"	8.6	ુ (5.8) <sup>ત</sup> ્ર	· · · · ·	Mod. Alk	aline	4533		, ,	S Section	2 20 7 7		·, ^ ,
Conductivity	3,010	(-)	umho/cm	V. High			CL*		Ferti	lizer Reco	mmended	ł
Nitrate-N	3	( <b>-)</b>	∰ppm-′∞	III	en '. '.	, ' 'mb			il in in	30 lbs N/ac	re 🖟 🗠	" "gr##
Phosphorus	1	(50)	ppm	II .						<b>50</b> lbs P20	5/acre	
Potassium 🖟 🔭	74	(125)	<b>"ppm</b> "	i minimu	Mannifin	Mili 📜 📜		: * * * * * *	/ "x,, * ,	<b>45</b> lbs K20/	acre	. 5 %
Calcium	7,475	(180)	ppm		annimitani			,		0 lbs Ca/a		
Magnesium	<u> </u>	(50)	bbw		unidilitiguia		thii :			0 lbs Mg/a	cre	•
Sulfur	25	(13)	ppm	10000000	1111111111111111111		ı <b>ç</b> ımı			0 lbs S/ac	re	
Sodium'	2,812	(-)	ppm	. Hilliffill	iitiiliigi (itti					is it in	x 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	* .
Iron			20.		*	. • 13.1					, Angeria, gang ng mar	
Zinc 🎎 🐒 🗽	" rationation.	***					1, 4	.â'. Ú.	to by:		, w. 254	
Manganese	~X-13.0 / 30.1				ر (۱۱ م <sub>ا</sub> ۱۱ م		1		**			
Côpper( 🐾 🚉 🕍	2.5.3 \$	ê			` ^ ' / • ' ^	• • • •			. 1	. ',	~ ~~	Je 24
Boron			v 002 m	*	v 8s. s		i				A. W.	
Limestone Requireme	ent - 📝 🖄 🤄	Å så	· · · · · · ·		7rrps , , , rm	y ;	1 B	\$ · · ·	~-′′′′′′′′′′0.	00 tons 100	DECCE/acre	3 के क
			,		· v. magg appropriate	ge generally are a		. ms., er mons, e em	pproduct a secon	### No. 1	v a. a., sa	
` ~ `						y Test (S	aturate	d Paste	Extract)	. Lyškė		\$\$ . J. J.
				pΗ			3° 3277 C 48	8.		~	; * ·	r geneem me e
`	× ×			25, 600,004, ./40,000077	nductivi	ty 🦙			) mmhos/cr			MU
					dium	X1"b(\$ \$7)	er sep	W 6 C W6 - W	7 ppm		<b>68.171</b> me	
*	`	* *	*		tassium	14.	1 7 7		ppm		0.632 me	
					ılcium	un Suns 12 -	a. Linux	37	<b>p</b> pm		18.718 me	
,			` < _ ′		agnesiun	<b>]</b>	SEE FINE			was silv rain	<b>2.805</b> me	eq/L
				SA			< See 5 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	20.78			11 YUWY.	
\$ 1		٠,	N	, <u>,</u> , SS	\$P` <u>`</u> `~*			***75.4		· · · · · · · · · · · · · · · · · · ·		a ha

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water. Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down...



out of state County

**Laboratory Number: 231323** Customer Sample ID: DSB1 16-18

# Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown:				AY)						
Analysis	Results	CL*	Units	ExLow	VLow Lo	w Mod	High	VHigh Exces	<b>S</b>	
pH :: **	<b></b>	(5.8)	el di	Mod. Alk	aline	دائر پي د معيد		v ^		,
Conductivity	2.400	(-)	umho/cm	V. Hiah					Fertilizer Recommended	d
Nitrate-N	5	″ ÷ (-) °	ppm	" III 📜 :	4-35	, i	: '***** : ;	Kra D	30 lbs Nacre	·, "
Phosphorus	0	(50)	ppm				I	•	55 lbs P2O5/acre	·
Potassium	<u>*</u> 89	(125)	ppm 🛴						<b>30</b> lbs K20/acre	
Calcium		(180)		innumi)			MINIMA		0 lbs Ca/acre	
Magnesium :	187		ppm.	, mumini		undiimini	Oltti.	•	o ibs ca/acre ,, o ibs Mg/acre	
Sulfur	84	(13)	ppm	11111111111				I	0 lbs S/acre	
	2,927	<sub>22</sub> (-)	* bbū'€			non ijaan juuru	aininnii –			
iron	mgma	ne co	270	· "·		.1 %	<u>.</u>	5.3 .00	and a second way of the	
Zinc Andrews	v %,*		~ ~				k 🕉 .			-
Manganese		10 % ( )	N 2013 1 10	:	, •	, * .&. ++ +	! .		* (w)	
Copper		3 354	·" · , ,	3 12 17 52		the species	l . <sub>e</sub> rg		· · · · · · · · · · · · · · · · · · ·	
Boron		,		*, S*******	43	نم او	i		/a a a a a a a a a a a a a a a a a a a	
Limestone Requiremen		in Market filter		E ST.		// 4 <u>%</u> ***		~ , ~ ∮å	0.00 tons 100ECCE/acre	e ·
				<b>B</b> 24231	<b>S</b> 61.2.2.2	- T- 2076	***************************************	n 552551-122		an a lar.
′	` `	•	`			λ∝i ezt"(2º	aturated		act)	0-c42
				p⊦				8.0		T. 137
`	<i>'</i>				odium	ra 📜 🛴 .	" « ` sifelli	1853 ppm	ios/cm 80.649 me	- //
			٠.		tassium.	(		1003 ppm	0.765 me	eq/L ×~″×°
	>		·		ilcium					
							** *	676 ppm	33.725 me 3.216 me	
, , ,					∖R			18.77	3.210/III	34/E
·						2038	3.1-28-4			£11,707
				A A 100	J 128 / 12 1860	(888 1/	3 2000 1	2 - 11 - 1	. ; »." % A. »» @	"

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water. Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down...



out of state County

Laboratory Number: 231324 Customer Sample ID: DSB1 18-20

# Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX) Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007

Area Represented: 1 acres

Crop Grown:	BLUESTEM	(GRA	ZING OR H	AY)							
Analysis	Results	CL*	Units	ExLow	VLow Lov	v Mod	High	VHigh	Excess.		
pH :	8.3	* (5.8)		∰Mod. Alk	aline		-, .	960 1 mil	** *****	, ' a ' '	
Conductivity	2,160	(-)	umho/cm	High		CI	L*		Ferti	lizer Recor	
Nitrate-N		<sub>≲2</sub> (-)`	ppm			·				25 lbs N/acr	e <sub>′</sub> , - <sup>**,</sup> , ****
Phosphorus	1	(50)	ppm	1						<b>55</b> lbs P2O5	
Potassium	~	<sub>e</sub> (125)	ာ် ppm	: <u>jjugunji</u>	í irni ínterin	n i j			×	<b>55</b> lbs K20/a	rcre 🤚 🔭
Calcium	7,829	(180)	ppm	[[[]]]			<b>CONTRACTOR</b>		·	0 lbs Ca/ad	re
Magnesium 🔧 👢	150	(50)	ppm	§innunij	IN BERTATAN (ER TÖRFE) EN	tijajanatutija (	an 🐒	· ;	F" .	0 lbs Mg/ad	cre 🐧 🛣
Sulfur	26	(13)	ppm	INHIHI			) ELLEI	,	*	0 lbs S/acr	W 9/W
Sulfur Sốdiệm	2,732	<b>%</b> *(-)	ppm	<u></u>	ineriilioprioe	aidnyanny	111111111111111111111111111111111111111	i K.		2 2 2 2 2 1	
iron							1				v
Zinc 🚉 🐪	arib M		,		15 . 18 m. 1 m.			·,~ · ·	., <u></u>	<b>X</b> : 1	
Manganese					•		!				· /3 ·
Copper	· · · · · · · · · · · · · · · · · · ·	a^.		,8 · <sup>3</sup> ·	i i	ù. Ť	byn i		~ 	* * * * * * * * * * * * * * * * * * * *	
Boron											
Limestone Requiremen	t , ,,,,,,,			· ,	Jan Still	ij.	). FY	- AZX	° `	00 tons 100	ECCE/acre 🎝
				26 m		***********	* ******** *****				
* * /	× × ××			Detaile	d Salinity	Test (Sa	turated	Paste	Extract)		
				pΗ		rygggggy N N Y N , N .	^> 2" 20"39."3" "	7.9	)	***	
/ /	,									n' i	
				So	dium	Allendari v	2000/	1655	ppm	7	2.003 meq/L
· ·	*		,				Total S				0.615 meq/L
				Ca	lcium	70718	* * .	848	ppm	4	2.309 meq/L
	*			Ma	gnesium		í. úří	61	ppm		<b>5.015</b> meq/L
,				SA	.R			14.80	1		
\$ /			× 5	્∦≪SS	P-1 (	Little Harris	- 430	60.03		<i>₹\\$\\$\</i>	<u> </u>

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water. Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down.



out of state County

Laboratory Number: 231325 Customer Sample ID: DSB2 0-1

# Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

•	n: BLUESTEM	-		AY)							
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	Hıgh	VHıgh	Excess	
Hi A A A A A A A A A A A A A A A A A A A	8.2	´(5.8)`<		Mod. All	caline 🦠	Ç 5 - 7	, Sale of Sale	, ,	2 . 4		· · · · · · · · · · · · · · · · · · ·
Conductivity	139	(-)	umho/cm	None			CL	•		Fertilizer Recomi	mended
Nitrate-N	ر الله الله الله الله الله الله الله الل	( <del>-</del> )	ppm		in the second		^ ^*;	. :	. 42.	30 lbs N/acre	
Phosphorus	3	(50)	ppm	111111						<b>50</b> lbs P2O5/a	
Potassium 🚜 🔭	` * ~ ~ *;· 192`*	િ(125)	, "Appm	ः । वार्षेतवात	duniin)	miliiiii		III estat		0 lbs K20/ac	re 🤼
Calcium	1,691	(180)	ppm		1111111111111					0 lbs Ca/acre	•
Magnesium 🛒	145	ૈં (50) ે	ppm		111111111111111111111111111111111111111	mmij			â ying,	0 lbs Mg/acr	e <sup>t</sup> in interest
Sulfur	8	(13)	ppm		ainman(					5 lbs S/acre	
Sodium	137	(-)	<sup>∞</sup> ppm		Hillenii (	<i>‰</i> /′°:	ale i	7, 1			- 3 -bat-
ron							<u> </u>			m. A. m. a.	
Zinc 🚉 🤺 ,	133 - 1 42740		· 255:			:	182 1824	·	, , , ,	: 1	. i , . i , . j
Manganese	507		, ,				!				
Copper		*	. 48.00 m. 1	4.50		25°Z 25'	, i	à.			
Boron		,,	, ,				i			40 "	
Limestone Requirem	ent ,, , ,		/ 200			"va 7	h an	- W -	AN TIET	0.00 tons 100E0	CCE/acre
	,			,			,	****	control annual cons	TINO I TO ONE OOS ON THE STREET	5003, 5000 vers // +
·	×	*	\*\			nity Te	est (Sa	turate	**	Extract)	
				pH	1	55507250750	800a(8,9997 * ;	7 2	7.		alaa lehata ka hakka
` ` `					onducti	vity	, ' , William Mai S.	i Jedhed I	D-00000 -00000 -000000000-0-9	2 mmhos/cm	
					odium		.3 .45	4° <3" 7889	AW WA W Y		.005 meq/L
۶,	* .			20,0,2007, 34 , 46 ,6863	tassiu	mi ,				A 1 G 7000/000/00 / 20 13/00/A	.216 meq/L
					alcium	.,	.ca	4 (347)	"/ " X . S . S . " .	( * ) 2 2.5° V ( ) 2.5° W ( )	<b>.712</b> meq/L
Λ.	`		;	*****	agnesi	ĭW.≆∵ij		K 1 21th.	v 2000	**, **, ** * * * *** *** *** *** *** **	<b>.277</b> meq/L
					AR	, 5° 20000000	Krain and in	"	8.0		~ ~@*** ##
*	,			**************************************	うて 🏈 🤻 🦭	`/ <b>WW</b>	\$ ^ \ /# "	is	<b>23.8</b>	8	789 4

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down.

Sulfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur



Tulsa, TX 74135

out of state County

Laboratory Number: 231326 Customer Sample ID: DSB2 1-2

Crop Grown: BLUESTEM (GRAZING OR HAY)

## Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007

Area Represented: 1 acres

Analysis	Results	`CL*	Units	ExLow	VLow	Low	Mod	High	VHıgh	Excess.	
pH	∗ 8.2	∞(5.8)	*********	Mod. Alk	aline	2°4 ,		S	. i	e-1 . 291	
Conductivity	190	(-)	umho/cm	None			CL	•		Feri	ilizer Recommended
Nitrate-N	. ] 3	້~≀ · (+) <sub>ໃພ</sub>	ຼຼື ppm ໍໍ		6 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	. ·	. ** .	÷ `:		and Sign	30 lbs N/acre
Phosphorus	2	(50)	ppm	111			1				50 lbs P2O5/acre
Potassium	202	(125)	ppm	immanni:	ilių į į į į į į į į į į į į į į į į į į į	mmi	mma	II . ∵	, ; · · ·	• ~~~``	. <b>0</b> lbs K20/acre
Calcium	6,187	(180)	ppm	111111111111					_		0 lbs Ca/acre
Magnesium 🕌 🥻	. 337	(50)	"p̃pm	(† julimenti	mmmii	mini	iiniiini (	manii.			0 Ibs Mg/acre
Sulfur	17	(13)	ppm	1111111111111			mmi	ı,			0 lbs S/acre
Sodium	133	(-)	🙏 ppm 🧪	11111111111	uminint	•	ر الله الله		*	•	
iron	,		*				į		- 4 -	*	
Zinc , Zinc ,	~	^		Tive Ai	`-]?	· - "	' I	7.784	å læ u s	· P. My	i wa Kuma
Manganese			<i>a</i> n				!	,	,		
Copper		~ ~		: :	5 - Y	* *			in Gr	- Project.	
Boron	a 13			v			_ i				
Limestone Requirement			· ~>m	with the		×44, 9"	B.	· //.	,	<u> </u>	0.00 tons 100ECCE/acre
				····· 39		, · · · · · · · · · › · › · ·	c.com~~eng~mon	mas surmes de	r www	· managers of managers of	ξλ. χ
N →			*			ity Te	st (Sa	turate		Extract	
			~	pH		7977873888	90000000000000000000000000000000000000	T26222000000000000000000000000000000000	8.		in a finite income a section of the
, "		5.7	/	700000000000000000000000000000000000000	4 /	vity	Digitalizar (	: VIII:	~	/ ** *	
				So	dium	o *	s 2' 20'	Superior and an	<b>2</b> '	1 ppm	0.932 meq/L
· ' · · · '	`						``\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	, T			0.116 meq/L
χ.				Ca	lcium	y	^ ~ ~ « <u>*</u> * *	/mm * */		7 ppm	3.366 meq/L
<b>\</b>			4	~ /********** ~	ignesiu	im.					<b>0.386</b> meq/L
		,	,	SA			*	**	0.6		K TV TOTTS (BOOM) NO BOOMS AND A COMMISSION
<u> </u>				* **\SS	P		1. Å.	The way	19.4	Z 🖟 🗸 💪 🕠	

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down...



out of state County

Laboratory Number: 231327 Customer Sample ID: DSB2 2-3

Crop Grown: BLUESTEM (GRAZING OR HAY)

## **Soil Analysis Report**

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown	: BLUESTEM	I (GRAZ		1AY)									
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.			
pH - , , , , , , , , , , , , , , , , , ,	🤚 🌯 8.5 <sub>.</sub>	. (5.8)		Mod. All	kaline 🛌	ra maga V	4"	\$ s2 ^	, , , , s	* (\$.4.	~ _<= .	, الس	. 124:54
Conductivity	79	(-)	umho/cm	None			С	L*				Recomme	
Nitrate-N	3	(-)	ppm <sup>*</sup>					Zarty.	ie in	: 7, 7-7	<b>30</b> lbs	N/acre	
Phosphorus	1	(50)	ppm	1			200 %					P2O5/acre	
Potassium	40	(125)	" ppm	• //~	iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii					; <sub>4</sub> ,		K20/acre	yl (* ?
Calcium	30,135	(180)	ppm					#({			,	Ca/acre	, y
Magnesium	197		<sup>^</sup> ppm		iminga							Mg/acre	
Sulfur	48	ຸ (13)	bbw							400	O lbs	S/acre	
Sodium	200	~ (-)	_ , ppm	\$100000	Militari		43		v	. 4 .		, , , , , , , , , , , , , , , , , , ,	, , «
Iron	~ E. 19		*	. *		:		I I F	. 8 . 22	.a	~ *** ·		WA V
Zinc , ,	, ** ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	ý zi	pd 4 114	:	That ,:	,	. j	i **		~~ ~*		*	. 2
Manganese			· · ·	ħ.i.	, ×.		: -	:		:		vina da d	5 4 4
- •	The fact was		*~~ «	£M. Zr r	, , .	, :		:	* 8x ×	·	ia. ×	MT 7 .	2
Boron Limestone Requireme	nt «	*		** /	· marki i	- Sec. 1	_ dag_		~		0 00 to	ns 100ECC	E/åcro ⇔ Š
Limestone Requireme	110 %	`		****	* /	,	<u> </u>		<u> </u>		0.00 (0)	13 100200	Lacie
			,	Detail	ed Salir	nity T	est (Sa	aturate	d Past	e Extrac	t) [		AND COLLEGE
`				pl			atau.		8.	_ `	21 1. 4. 4. 1889	Sans. San 9 / Serian - 1	Carleid ad 1 des".d
*						vity	na i dala di	74.7375> - 1	. 0.2	5 mmhos	/cm		SWY-FI
,					odium	86°86. • 222. ·	X20000000			4 ppm		1.0	58 meg/L
, ,		^	5	P	tassiu	m 🦂		n paga		3 ppm			<b>73</b> meq/L
					alcium		******** 2 10	2 13 749211		4 ppm			99 meg/L
×	\$ \$			M	agnesi	ım 🔏				2 ppm			44 meg/L
`				9990 400 222 4020	٩R			~	1.1	24 ( 2 2,00 2,00000,	0. ALMON. VODONA		·
	× .			S	SD - (**	em radioa,	11 39 1	· •/ •	25 5	7 💥 🤊	20% 2211 W.	. 7 \$288.5%	:: Takki :: 198 788

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down .

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre



out of state County

Laboratory Number: 231328 Customer Sample ID: DSB2 3-4

### **Soil Analysis Report**

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007

Area Represented: 1 acres

Crop Grown	n: BLUESTEM	(GRAZ	ING OR HA	AY)							
Analysis	Results	CL*	Units	ExLow	VLow Low	Mod	High V⊦	igh Exces	s.		
pH A	\$ 8.7	(5.8)	, <u>*</u>	Mod. Alkali	ine			3 3	*		, ,
Conductivity	74	(-)	umho/cm	None		CL.	•		Fertilizer	Recomme	nded
Nitrate-N	3 <sub>1</sub>	, (-) <sup>~</sup>	ppm 🗼	ِّ ، ﷺ		74°			<b>30</b> lb	s N/acre 🦩	
Phosphorus	0	(50)	ppm			;				s P2O5/acre	
Potassium	25	(125)	( ppm		l 🛴 . " "	* 1	**/***********************************		<b>95 l</b> b	s K20/acre	
Calcium	29,882	(180)	ppm						<b>0</b> lb	s Ca/acre	
Magnesium	192	(50) î	ppm (	innumini	<u>iannii janiista</u>	marrenini <b>ė</b>	M : 42		0 lb	s Mg/acre	30 A. J.
Sulfur	55	(13)	ppm			ingrittini <b>†</b>	888800ÉU		<b>0</b> lb	s S/acre	
Sodium	209	~ (-) <u>.</u>	ppm	\$:Menonging	man(M) 🔻				"", A. M. K.	"and a r"_d	7,7 × 1
Iron	0.4			Agg A .	07 <b>-</b> 0 50 000		Maria *		v ****		* *
Zinc	The second of	,	* * *			· · · · · · · · · · · · · · · · · · ·	:		· ~ .	<i>"</i> " "	
Manganese						. !					
Copper 🔏 🐔		ŝ.	 ".,. "	~ 2 :: .	•	(4)	*. '.:	,		. Aite	
Boron	. *	.728		ns find X *	godh o		*	*		· obv · b	
Limestone Requireme	ent ***	ii m	· Till	1 24	5				0.00 to	ns 100ECC	E/acre
			,	_ ^_ *_***	908/115 ^ * _ ^ ^	<u> </u>				** *** * *	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
,	•				Salinity	Test (Sat	turated,P		act),	with the	Anima
				pH		Mariana Mariana Maria	Sa 7277222 20070 3	8.4	CT FACTORIANTS IN		1,000 0 0 1000
` '	, ,			//www.xwx.w.	ductivity			0.26 mml	/		ğiriyə
<b>y</b>				Sod	ium	per on anyone of	R LEWY D. MENT, 1866	19 ppm	l VANSAPANA MENNYA		37 meq/L
` ' `		X	*	-	ışşlum.	" <b></b>		4 ppm			0 meq/L
					ium	a	1	<b>50</b> ppm		* * Jung 2000m30 *	95 meq/L
,				possesso. A VA -	neslum			2 ppm		0.18	32 meq/L
				SAR	00 N NORMAN YORK OF	aus >= 3,54,550		0.72	kalarak Siri (4)		
		. v		SSP		<b>X</b> : 324)	La 34-7 2	3.23			

\*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down...

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre



Tulsa, TX 74135

out of state County

Laboratory Number: 231329 Customer Sample ID: DSB2 4-5

## Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Gro	wn: BLUESTEM	i (GRAZ	ING OR H	AY)					
Analysis	Results	CL*	Units	ExLow	VLow L	ow Mo	d High	VHigh	Excess.
оН`,	ੇ ',∗ <sub>&gt;</sub> , } 8.8	(5.8)	. 12-14 °	Strongly	Alkaline	41 m.d	المارية والمارية		
Conductivity	. 70	(-)	umho/cm	None			CL*		Fertilizer Recommended
Nitrate-N	4	(-)	ppm		u. I		44.00 Z		். ஆ. ஆ. <b>30</b> ்lbs N/acre ் ் ்
Phosphorus	0	(50)	ppm				l "		55 lbs P2O5/acre
Potassium	37	<sup>*</sup> (125) <sup>*</sup>	, ppm	immimi)	ııııı ",‡		4   12 ar 24		80 lbs:K20/acre
Calcium	31,149	(180)	ppm					iii	0 lbs Ca/acre
Magnesium, 📜 📳	240	(50)	, " ppm						🗼 🗽 🐧 lbs Mg/acre 🕟
Sulfur	58	(13)	ppm				un <b>i þ</b> umm	iii	0 lbs S/acre
Sodium 🦥 📜 🥞	170	(-)	ppm	, initiality	iitiittiii(itt	: : : : : : : : : : : : : : : : :	: 4 May 2	: j. ~	
ron							i		v v 0,000 g v
Žinč 🚉 🐪		,	·%, `,	Ti a		ور در از الرابع			
Manganese					·	n 1 h 1 m	- 1 1 - 2 - 3		3 - 4 - 6
Copper		`^# € J`,	, , , , , , ,	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	, * · · ·		. i .	~:, <u>.</u>	
Boron		4 )			2	;	, i	*	a - 05
Limestone Require	ment 5 🛊	- A	ig, , ,	/	-: 1, mm.	a ii 🤻	·j. 'š	, \$1, <u>15.</u>	0.00 tons 100ECCE/acre
							**************************************	70.278892 (72. 70	
,				· · · · · · · · · · · · · · · · · · ·		ty Test	(Saturate	AN A4 NA	e Extract)
,				pl				8.	· <del>-</del> · · · · · · · · · · · · · · · · · · ·
	`			rolled roll 49 roller	onductiv	ity		~ 765 - 78000CC00,9000C	3 mmhos/cm
				_	odium	2	and Same	· · · · · · · · · · · · · · · · · · ·	4 ppm 1.483 meq/l
			× .	44// / /	otassium	20 22 20			3 ppm 0.078 meq/l
	,				alcium	,	£* .		7 ppm 1.832 meq/l
				300000.0000.0000.000	agnesiui	n j	i Widt		2 ppm 0.166 meg/l
					AR	aran yan		1.4	
	1 4		``	<b>5</b>	SP			<b>4.1.6</b>	7

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre



out of state County

Laboratory Number: 231330 Customer Sample ID: DSB2 5-6

Crop Grown: BLUESTEM (GRAZING OR HAY)

## Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu
Sample received on: 12/14/2007

Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown: B													
Analysis	Results		Units		VLow	_	Mod	High		Excess.			
pH: ***	8.9	(5.8)	". <b>* -</b>	Strongly	Alkaline	·	ř 4°2	ring design	s, ( , <u>, , , , , , , , , , , , , , , , ,</u>	ir i i i i	i Consti	,*, a ,	Je - 1895
Conductivity	79	(-)	umho/cm	None						Fe	rtilizer Re	ecomme	
Nitrate-N	2	· (-)	ppm	in land	,,,, :	· · · ·	•		sire (i		_ 35 lbs l	N/acre	yang desir
Phoenhorus	0	(50)	ppm					!			<b>55</b> lbs i	P2O5/acre	:
Potassium	. 49.	(125)	ppm		111111111î ;			1	:		70 lbs l	K20/acre 🦫	" -{ Ja (\$:3
Calcium	30,424	(180)					][[]]]]]]	ķmmm	11		0 lbs (	Ca/acre	
Magnesium,	349	(50),	ppm		mmmi	iiiiudii		Quain "	ž * "*	• • • • • • • • • • • • • • • • • • • •	0 lbs l	Mg/acre	i di
Sulfur Sodium,	63		ppm	MARKINE	Minnen							S/acre	
Sodium	194	رث <b>, (-)</b> ژ	ppm	100000	injiiiin	Ш, , , ;	× 50° 50°				12.02		ъ.
Iron Zinc (1985) (1985) Manganese	* * * *	···	n var m		en 2/2		.,					ang ang	Su 2
Zinc 🕍 👸 🗀 💥 🚉	č		24.	, , , , , , , , , , , , , , , , , , ,		413 m			January	: 500 %	-is 10gs	, <u>,</u> ×,	~s
Manganese	w n 33. W	5	300 ag		18 mg , m	2×4 4 _ 4-	oser v	!					
Copper		~ x ~ x ~ x ~ x . x ~ x	#J.,	* ·			·	Ì		•		~. «į	* *.''
Boron	. 9.	· · · · · · · · · · · · · · · · · · ·	278	er i				i	-		,	,	4
Limestone Requirement			A		*			17 12 41 17 12 41	8 - · · · · · · · · · · · · · · · · · ·	~, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.00 tons	100ECCE	E/acre
					0 11016 200	::::::::::::::::::::::::::::::::::::::		alant a ditendada.	in the section of the	~ ***** * ** ****	maning summ	anama manama	830 - CRYSON CORC., 100 °
		<i></i>	* /			nity:Te	est (S	aturate	d Past	e Extrac	<b>t)</b>		
				pl		TATOMAN.	**************************************		8.	6		5 ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	~2000ACC 0000A_TOUGH
` `					onducți	vity			્રે ુે.0.2 વ	8 mmhos	s/cm		
, \ <u>\</u>				S(	dium	#40 as 152	has 2. S. 2	er er er	2	5 ppm	a compression	1.08	6 meq/L
· •		`				m ·	AND I	23 / USA 31					
			,		alcium	2/257	,, ,,, ,	* >	3	1 ppm		1.56	9 meq/L
· `						um 💨		rie 1. 1	-			0.23	3 meq/L
					AR		*/	·	1.1 "عَدَّ تَّ	4 <i>ጞ</i> ፟ <sup>ጜጚፙፙ</sup> ፠፨		AND COMME	
, , ,	_ ′, _ `			::::::::::::::::::::::::::::::::::::::	<b>ЭГ</b> -су у у		124 m	~ .	30./	to the	<u> </u>		

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down.



out of state County

Laboratory Number: 231331 Customer Sample ID: DSB2 6-8

## Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown: I	BLUESTEM	(GRAZ	ING OR H	AY)							
Analysis	Results	CL*	Units	ExLow	VLow Lo	w Mod	High	VHigh Exc	ess.		
pH 🤼 🔩 😘 📆	8.8	(5.8)	, - i,	Strongly	Alkaline	74 A	, , ,	~~ .	,		44
Conductivity	99	(-)	umho/cm	None		c	L*		Fertilize	r Recomme	nded
Nitrate-N	<b>2</b> .	(-)	ppm "	· • • • • • • • • • • • • • • • • • • •		the Janas		·	35	lbs N/acre	
Phosphorus	0	(50)	ppm				i		55	lbs P2O5/acre	•
Potassium ***	િંં 🔩 60ે	<b>(125)</b>	ppm		iiniiiin(tun	L.:		~ .:	. 60	lbs-K20/acre	
Calcium	13,123	(180)	ppm		Manimina (		•	~ - *	0	lbs Ca/acre	
Magnesium	256	<u>"(5</u> 0)	ĎĎΨ		miniminn				` `0	lbs Mg/acre	
Sulfur	20	(13)	ppm		miilinininin	i i i i i ji i i i i i i i i i i i i i	<b>ļ</b> li	,	0	lbs S/acre	
Sodium - 🏥 🚉	149	(-])	ppm	300000	niniiniiii	: , .		, ",#\. , "f	C. The	· TANK	* 3
Iron	n one	987-0"	*.		y ~ ~ ~	,,, , , , , , , , , , , , , , , , , ,	i	··· š.	· · · ·		a.e. ^ / .
Zinc, Value of the control of the co	~	ř .	+ 2.er		* * * *					A.J.	
Manganese	,	A3m	,		- , » •	. 80x *s.	1 1			* x	.*
Copper	* * .	~ <sup>~</sup> ,  ~	~ . š ′	' de exem	, <u>, , , , , , , , , , , , , , , , , , </u>	To the second			~~ <u>*</u> ~	^ %	49
Boron	^	a/,/	, , , , , , , , , , , , , , , , , , ,		* ~g.4~	~15, 12.w	i, , , .	. 24 4			ا و دم
Limestone Requirement	" " " " " " " " " " " " " " " " " " "	<u> </u>	* 12°	.p.7				3 /	· .0.00	tons 100ECCI	Z/acre
							, or respect		or sundictions	*************	75 - v. a. seitaile.
	*				d Salinity	/: Lest (Sa	aturated	Paste Ex	tract)		
				рН		in The Li		8.6		- 538 47894	
,			`		nductivit	<b>У</b>		0.22 m	4 N 4000 N /	4.40	•
` .					dium	Santa Maria	yr, wynddag yn yn	25 pp	still waste ∧. o <b>w</b>		0 meq/L
`	\$				tassium		ic. ***		wskieje Wiek	, , , , , , , , , , , , , , , , , , ,	4 meg/L**
*					lcium		- CANO 61	17 pr			3 meq/L
	` `			SA	ignesium		/ / //	<b>2</b> pr 1.57			2 meq/L
,			>		KK SP`∗∡	Nan.			Maria (1907)	ga Tarka	
<u> </u>				7.000		* "X 300/A	· · · · · · · · · · · · · · · · · · ·	<u></u>	K. gr.,		144

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down



out of state County

Laboratory Number: 231332 Customer Sample ID: DSB2 8-10

# Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grow	n: BLUESTEM	I (GRAZ	ING OR H	AY)									
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.			
pH*\$\:\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	. 8 <b>.</b> 8	(5.8)	AND WAS I	Strongly	Alkaline	, 3, 3, 3, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4,	·	*					
Conductivity	161	(-)	umho/cm	None			CI	.*		Fert	ilizer Re	commen	ded
Nitrate-N	** *	(-1)	🎏 ppm. 🍜		, i	:		~~~~;		. Krajak-	35 lbs N	acre , 🦂 😘	all ti
Phosphorus	0	(50)	ppm				i	ļ			55 lbs P2	2O5/acre	
Potassium	102	(125)	* - ppm,		iintiniintii					, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	20 lbs K	20/acre: :	8w , 1 "
Calcium	17,742		ppm		HERRIEN						0 lbs C		,
Magnesium	383	(50)	ppm	§]iinnmid					. :		0 lbs M	g/acre	
Sulfur	44	ູ (13)	ppm	111111111111111111111111111111111111111			minnet	) i na ina ina ina ina ina ina ina ina in			0 lbs S	v	A/F
Sodium	<b>1. 281</b>	(-) \	~ ppm.	· šininini	11111111111111111	IIII, ±	1.27		il da E	i in Ka	ž	a ii:	g ~~
Iron	Sin f	~ ×× × × ~			~ ="	~ ~a «	į				. ^	~	~~
		\$. <sup>3</sup> .	Tars of the	• !	^ <b>:</b>	****	, , ,	:	, " " \$ <sub>v</sub>		2.,	. દે પ્રાપ્	
Manganese	*** ** 1	,				•			,	,, ,	,,, ,,		
W MA - 1 - M		7 750	, j z z	::::	:	•		i	)	skrige ''			
Boron	, · . · · · · · · · · · · · · · · · · ·	* * * ·		6	~ ~~ ~. ~. ~. ~. ~. ~. ~. ~. ~. ~. ~. ~.	0_% a_a_k_ k_ #					***		97
Limestone Requirem	ient ∉. →, 2	,		. * 5"	<del> </del>	ş ^	· 'sie.'	_ 1 ,	74. <u>%</u> 4.		.00 tons	100ECCE/	acre -
				ana a si	::		2.702	77.00 - T. 1.00 -	. <b>27</b> 27	* ^ ^	e e e e e e e e e e e e e e e e e e e	e authorise was	N = 727 1 290 7
			*			nty re	şt (58	ıturated		_		A7 Libra izv. skil	
				ph					8.8		m,	inita un sé il i	
`			× 2		odium	vity «		e a l'arracul			an Case.		
× ×								ie. wa	4. 	2 ppm			meq/L
*	`				itassiui Icium		#`.1\\	Z				0.720	
	· ·			Ca Angles (Canada)	iiciuiii ianoei:	!m	. sait V	<i>\$4.70</i>	14	l ppm	erika erika . Kirka erika	0.72U	meq/L
,					agnesiu \R	uuss	diam'r	an dilla	2.83		will will "		med/L
	× ,						, **	1 -2.335, 5				e i enero	e Marchia
	<u> </u>	· · · · · · · · · · · · · · · · · · ·			<b>/1</b> - / <sub>2/</sub> //2 20	. 804.23.738.7		, <u>, , , , , , , , , , , , , , , , , , </u>	55.00	do a strain of the second	· San Francis	Zonotha sasat (a x s	

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down...



Tulsa, TX 74135

out of state County

Laboratory Number: 231333 Customer Sample ID: DSB2 10-12

Crop Grown: BLUESTEM (GRAZING OR HAY)

## Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown: E	POESIEN	IGKAZ	ING OR I	IAT)							
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess	<u> </u>
pH 🏥 🔭 🚴	9.1	<del>્ર (5</del> .8) -		Strongly	Alkaline		47 E	South		v.	
Conductivity	74	(-)	umho/cm				С	L*			Fertilizer Recommended
Nitrate-N	2	(-)	ppm	F. Chr	" * <u>*</u>	3.	* *	: *		: ***	35 lbs Nacre
Phosphorus	0	(50)	ppm					1			55 lbs P2O5/acre
Potassium	48	ູ (125) ີ	ppm	: [miiimii		A carin :	J.	1	·	de ,	70 lbs K20/acre
Calcium	18,473	(180)	ppm	18888888888			311111111111	Á I I I I I I I I I I I I I I I I I I I	11		0 lbs Ca/acre
Magneślum 🛬 🔭	ਁ <i>૽</i> ૣૣ1*78	(50)	ppm	ંતાંતાતા <u>ં</u> મો			•			: **	0 lbs Mg/acre
Sulfur	23	(13)	ppm		111111111111111111111111111111111111111						0 lbs S/acre
Sodium	179	· (-).	ppm 🤫	iniiniii 🗝	į į į į į į į į į į į į į į į į į į į	~~;	in -24	ar la x	, 14. 1,	_ * ·	
Iron		cotos" - 1				**		1			
Zinc		** / .	~ ~ ~ <del>**</del> **		!^~, ;:	, - <u>,</u> «	<i>⇒</i> , ″	! . 10		x 2 / 1	
Manganese			h	•	:			1	4	•	¥
Copper	1. · N	Call.	l of		* :	48	*** **	l			
Boron							,	, 1			
Limestone Requirement		tn	****** / ·	Brans Arthur	* *:	. , a	, 4: .)	G2	7: 5	1-22	0.00 tons 100ECCE/acre
					rapped analysis of the	·		· ········· Nothin	%(n.c.mm v	,	The state of the s
, ` ` 4		` `				ity To	est (Sa	aturate	d Past	e Extr	act)
				pΗ		Spir rendere	808 <del>7~</del> 736577 192	rear inclusion	. 8.		
, ,						vity	gam ga. s Marana				ios/cm
				Sc	dium	50m pm	· ~,, · puma		3	7 ppm	1.629 meq/L 0.075 meg/L
·	,		` `	Pc.	tassiu	m.	e de C	i. z. Satradia	* sokemorae	3 ppm	<b>0.075</b> meg/L
,				Ca	alcium					8 ppm	<b>0.421</b> meg/L
`				Ma	agnesiu	ım.					0.078 meg/L
				SA	٩R				3.2	6	
`	\$		*	- SS	D V / mis		7.77	270000C	77 °C	<b>~</b> 333333	

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down...

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.



Tulsa, TX 74135

out of state County

Laboratory Number: 231334 Customer Sample ID: DSB2 12-14

Crop Grown: BI HESTEM (GDAZING OD HAV)

# Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown: B		I (GRAZ		AY)						
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.
pH **	<i>≨</i> ″. ∗,8.1.	(5.8)	·	Mod. Alk	aline			, 130 · ,	×× ) ~	
Conductivity	89	(-)	umho/cm	None			c	L•		Fertilizer Recommended
Nitrate-N 🦸 🚉	ૈં ૈં 3	(-)	ppm	z <b>i</b> , A :		· :	. ~ ~		· 3 3	30 lbs N/acre
Phosphorus	2	(50)	ppm	Ш						50 lbs P2O5/acre
Potassium	45	(125)	ppm .			-	. Př			75 lbs K20/acre
Calcium	6,542	(180)	ppm						II .	0 lbs Ca/acre
Magnesium		(50)	ppm		x ~~d^x :	~~ ~~ ~ ~ ·	. ~		3	0 lbs Mg/acre
Sulfur	12	(13)	ppm		manniiit			·	·	5 lbs S/acre
Sodium	"18 <b>7</b> ~	(- <u>.</u> )	, "Ďbu	* juunui	munimiti	li = = =;	18 - 1 - 1 - 1	i , !	***	
Iron		A Y M	~ ~ <sub>***</sub> ~ ~ .	*	to contigor o	372			~- ,×	** ******* * ** ** ** ** ** ** ** ** **
Zinc <sup>®</sup> , The state of the stat	Service Constitution	, ",	^	: :	. :	, .	in		ૈ€ ,	
Manganese	. 7	/ . 7	elem is the marke	y	ga, la h	~	~		,	* * * * * * * * * * * * * * * * * * *
Copper	, ,				Ir :		·		23, 23	A STATE OF THE STA
Boron	Part No. 2 mg					.4	ا مش	L Lann na	2w	
Limestone Requirement	**************************************	in in	- 74" * ãok) .		~ , <i>'m z</i> >	, y		*	ne far s	0.00 tons 100ECCE/acre
<b>V</b>				B 2200	. S 638:-					
`	× .	*		, ,,,,,,	***********	iiry i	est (S	iturate		e Extract)
		,		pH	ı onducti	ulhi 🖫			8. . 0.2	8 mmhos/cm
•					odium	Aira 🧞	W. 1. 7		~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	5 ppm 1.949 meq/L
		,	,		tassiur		2005. AM	recesion.		3 ppm 0.081 meg/L
,				2 2 2 2 0000000	ilcium	7×6'3	1941 P.	2000		7 ppm 0.863 meq/L
<b>&gt;</b> 3			×	14 Jgr 2007	ignesiu	ım a'ʻ	. KAN	<b>lid</b> vasa s ideo		1 ppm 0.303 meg/L
, '				W 10 W 1 W 10W	agnesio AR		,	· · · · · · · · · · · · · · · · · · ·	2.8	A. 194 A. A. A. A. A. A. A. A. A. A. A. A. A.
			•		N SP∴ares	ke d <b>ili</b> d		; Silla ramaran a		2
				AR . X4.6.2.	va: 900 0				** 1 100 1 1 T	when all and an and an and an and a contract of

<sup>\*</sup>CL=Cntrcal level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre Sutfur: Available sulfur may be found deeper in soil profile, thus limiting any response to added sulfur.



Tulsa, TX 74135

out of state County

Laboratory Number: 231335 Customer Sample ID: DSB2 14-16

### Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007

Area Represented: 1 acres

Crop Grown:	BLUESTEN	(GRAZ		AY)							
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess	
pH :	. 8.8	(5.8)	n affili	Strongly	Alkaline		. S. S.	, , , , , , , , , , , , , , , , , , ,	/a/F	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	* * * * * * * * * * * * * * * * * * * *
Conductivity	167	(-)	umho/cm	None			CL	•		Fei	tilizer Recommended
Nitrate-N	` 1° ° 2*≤√ <b>3</b> ·	· (-)	, ppm	֓֓֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓						: # ~ *{***	்30 lbs N/acre
Phosphorus	2	(50)	ppm	III			i		•	•	50 lbs P2O5/acre
Potassium	32,	(125)	🍰 ppm 🕠	ininunini Tainunnin		·, [	' 1 1		٠, , , , , , , , , , , , , , , , , , ,		85 lbs K20/acre
Calcium	12,527	(180)	ppm						H		0 lbs Ca/acre
Magnesium 🐧 🗼	94	(50)	ppm		Minimi	iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	iiiiiiiii 9	ř.			0 lbs Mg/acre
Sulfur	32	(13)	ppm				HEHHHH	HIIII	• ***		0 lbs S/acre
Sodium	205	( <del>-</del> )	`∍ppm		miniti	I .,	4 1 1	E 4		:	
Iron	· ^~ ^~ ~~	*		. :			į		*	s ~ ^	
Zinc.		2/4°.	f,				47.		: 27	:	
Manganese	,	.0 . 0*	wm 04 101	20 ranhaya 2 20 "		×	1	, s.	,		, , , ,
Copper				amg. II., hTg. us.n.h.	· · · · · · · · · · · · · · · · · · ·	: · : · : · : · : · : · : · : · :	i firi		•	*.** )	
Boron	,		*	**		,		,			
Limestone Requiremen	nt, î.::-	, , ĭ,^	,	~ ~		4"		~			0.00 tons 100ECCE/acre
					- # v. shore we sime	al relativessors.	77.5% JM, Y v				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
,				·	***	ity Te	st (Sa	turate		e Extrac	
				pł	- Ar 16	e Kure vier		,,^^~ = ^^=	8.		Marie i and marie and marie and a simple and a simple
S - 25 - 7 - 7			× .	40°527 X 50°07, yww	onductiv	vity 📆		#LEW		0 mmhos	
					odium		2.	de Neb		6 ppm	3.754 meq/L
	•				otassiur	ŋ 🌃		73 - 1			0.100 meg/L
	^				alcium	. /2	Sec. 356 2.6	3 523 34K . v		<b>7</b> ppm	2.326 meq/L
,	•			A 400 Y A	agnesiu	m 💮	Y.W.W.I	. Mr53	<i>₹999</i> •	3 ppm	<b>0:283</b> meq/L
					AR	discol # :	5.188° 1889	( × ) page page (Cons	3.2	9	
`	· · · · · · · · · · · · · · · · · · ·			S S	SP		y 1994 (1)		58.0	<b>8</b> : #.	

<sup>\*</sup>CL=Cntical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.



out of state County

Laboratory Number: 231336 Customer Sample ID: DSB2 16-18

Crop Grown: BLUESTEM (GRAZING OR HAY)

## Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

Crop Grown:	RF0F21FW	(GRAZ		IAY)								
Analysis	Results	CL*	Units	ExLow	VLow Lov	v Mod	High	VHigh	Excess.			
pH 🗼 🤾 🐔		(5.8)	ar rode	Strongly	Alkaline	ş *	1881	34.		, , w	w.v	~ .
Conductivity	112	(-)	umho/cm	~		ر ر	L•		Fe	rtilizer Rec	ommend	ded
Nitrate-N	<b>3</b> 2	· · · (-)	ppm	in Home	ri il	~~******* **		, , , , , , , , , , , , , , , , , , ,	,j-:7/jj	<b>30</b> lbs N/	acre 👙 🐪	£
Phosphorus	0	(50)	ppm			• ~	į .	. 20 .		55 lbs P2	:O5/acre	
Potassium 🌅 👵 🛒 🤼		(125)	; ppm		ninjiju tuju		•		x x	55 lbs K2	0/acre	
Calcium	11,357	(180)	ppm	•	ımıniiimeniii		. `			0 lbs Ca		"
Magnesium ,	162	(50)	ppm	• • •	umijiji	~ ~ •		.,2, .	• 1	🍀 0 lbs Mo	//acre	·
Sulfur	27	(13)	ppm		EREETTI TITLETTI					0 lbs S/	acre	
Sodium	186	₹ ( <del>-</del> )	ppm		innnaija :	ŵ." 't	;		: 1	¥ - 1 - i		~ ( ) }
Iron	yman maan ar -	*	~~ <u>~</u> ;	. 2~ ,	•^*	7 4	į , ,				*	
		່ສ່ 🔅 ,	ďχ,	. <i>&gt;~</i> .	water in it is an				24 - 22 - 22		, ž. a	^\$^ . ^
Manganese	· ^ "#	.W. x			ا ه ساي	,	i 1				Shire There is a	3 2 2
Copper 🕍	w) , , , , , , , , , , , , , , , , , , ,			* • • • • • • • • • • • • • • • • • • •		·	1	10	_ <3 ·		e ag .	., .,
Boron	the state of the s	•	ala a				i					
Limestone Requiremen	t in the	2.44	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	" J Jana Jana Jana Jana Jana Jana Jana J	<u> </u>	278 - D'			, , a ; <sub>e</sub> s	0.00 tons 1	00ECCE/a	acre*
,				·D-4-11	( <u>)</u>		11,4012	9822	~ <u>*                                     </u>			قَّ مَنْمَدُ سَنَد
`		•			ed Salinity	, i ežt (2:	aturate			<b>1)</b>	M. W. M.	W. 334 4
				p⊦	n onductivity	¥W · K &	: 3:22	8.		/%/4 \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	10° - 10° 20° 20° 20° 20° 20° 20° 20° 20° 20° 2	
`	× .		^,		odium Sūdiucuviš							
					otassium:	246 100	A2282-28-3"			43 /7%: YM		meq/L
*		, ,	J		~ * *	97997 N.P., 74	√ √2.					
,					alcium agnesium	x 7 5/8 20		<b>ے</b> درکشنیں	7 ppm	15 <b>998</b> 2 *** 399.6 **	1.324	meq/L
`	`		/		agnesium \R	à shi Tarin		2.4		in make one.	. U.10U	meq/L
, , , , ,			<b>x</b>		ar SP⊹∴ 🦝	»,	analysis			_^.	^~ ~ £	, m,
×,						99°00, /.	" north of the		<b>~</b> ,n aa ` ⊕ ,**	٠ <u>۱</u>		/3 4 44 44 4

<sup>\*</sup>CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down..



Tulsa, TX 74135

# Soil Analysis Report

Soil, Water and Forage Testing Laboratory **Department of Soil and Crop Sciences** 345 Heep Center, 2474 TAMU College Station, TX 77843-2474 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/14/2007 Printed on: 12/20/2007 Area Represented: 1 acres

out of state County

Laboratory Number: 231338 Customer Sample ID: DSB2 18-20

Crop Grown: BI UESTEM (GRAZING OR HAY)

Crop Grown: BLUESTEN	•		41)							
Analysis Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHıgh	Excess	•
pH	(5.8)	··· - · ,	Strongly	Alkaline	,	4 .	1200		£ 24	
Conductivity 129	(-)	umho/cm	None			CL	•		F	ertilizer Recommended
Nitrate-N 1	್ರ ೧೯ (-)	ppm-🚉				i Grandini.	:	J- »,		35 lbs N/acre
Phosphorus 1	(50)	ppm	H				· · · •			<b>50</b> lbs P2O5/acre
Potassium 34	(125)	ppm ,	. : : : : : : : : : : : : : : : : : : :	Min 🕌	وتيكارو د٠			y x	ir no. Iv d	85. lbś K20/ácre
Calcium 5,646	(180)	ppm	1661111111							0 lbs Ca/acre
Magnesium 68	(50)	bbiji (	:[IIIIIIIII]	HÜMHÜ	MMMI			, "da" <sub>s</sub>	, v	O lbs Mg/acre
Sulfur 17	(13)	ppm				mannad	Ш			0 lbs S/acre
Sodium 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	(-),	🍌 ppm 🔑	inininii.	iiniiiiti	III` °		,	,	: ;	
Iron										
	^3		`!:				/	. , s-m	• ""	
Manganese						. !				
Copper 1		>	•	i			t wie.	96 v 116	. %	
Boron		4144 #								
Limestone Requirement	· 2 . 3 . 4	****	, /		. 14 °.25	asl. h	n - 1 - 19	4,97%	or restorated to	_, <b>0.00</b> _tons 100ECCE/acre
*			Detaile	ed Sali	nity T	est (Sa	turate	d Past	e Extra	ict)
			pł	1				8.		
			Co	onduct	ivity	i Wali	2014 - C	0.7	4 mmh	os/cm
				dium					1 ppm	
× .				otassiu		·	.iŵ:i		6 ppm	
			Ca	alcium				4	8 ppm	<b>2.401</b> meq/L
			M	agnesi	um				3 ppm	0.276 meq/L
				٩R				2.6	7	
	À	× ×	S	\$₽ ::::::::::::::::::::::::::::::::::::			), is 25%	52.2	0	

<sup>\*</sup>CL=Cntical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended.

Nitrogen Apply an additional 30 lbs/A of nitrogen prior to each four to six week graze down.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.

Detailed Salinity Weights For Loyd Deuel Reported: 12/20/2007

Lab	Sample		Detailed Sal	Sal moisture
#	ID	Soil Wt (g)	H2O Vol (ml)	%
231270 S	SB1 0-1	70.85	30	42.34
231271 S	SB1 1-2	71.55	30	41.93
231272 S	SB1 2-3	70.27	30	42.69
231273 S	SB1 3-4	70.85	30	42.34
231274 S	SB1 4-5	70.81	45	63.55
231275 S	SB2 0-1	70.03	30	42.84
231276 S	SB2 1-2	70.18	30	42.75
231277 S	SB2 2-3	70.37	30	42.63
231278 S	SB2 3-4	70.35	30	42.64
231280 S		70.43	30	42.60
231281 S	SB3 0-1	70.75	30	42.40
231282 S	SB3 1-2	70.63	30	42.47
231283 S		70.74	30	42.41
231284 S	SB3 3-4	70.21	30	42.73
231285 S	SB3 4-5	70.16	30	42.76
231286 S	SB4 0-1	70.17	30	42.75
231287 S	SB4 1-2	70.35	30	42.64
231288 S	SB4 2-3	70.48	30	42.57
231289 S	SB4 3-4	70.64	30	42.47
231290 S	SB4 4-5	70 20	30	42.74
231291 S	SB5 0-1	70.14	30	42.77
231292 S	SB5 1-2	70.81	30	42.37
231293 S	SB5 2-3	70.82	30	42.36
231294 S	SB5 3-4	70.21	30	42.73
231295 S	SB5 4-5	70.07	30	42.81
231296 S	SB6 0-1	70.38	30	42.63
231297 S	SB6 1-2	70.31	30	42.67
231298 S	SB6 2-3	70.17	30	42.75
231299 S	SB6 3-4	70.07	30	42.81
231300 S	SB6 4-5	70.47	45	63 86
231301 S	SB7 0-1	70.35	30	42.64
231302 S	SB7 1-2	70.17	30	42.75
231303 S	SB7 2-3	70.80	30	42.37
231304 S	SB7 3-4	70.74	30	42.41
231305 S	SB7 4-5	70.74	30	42.41
231306 S	SB8 0-1	70.21	30	42.73
231307 S	SB8 1-2	70.06	30	42 82
231309 S		70 31	30	42.67
231310 S		70 19	30	42.74
231311 S	SB8 4-5	70.42	30	42.60
231312 D	SB1 0-1	70.73	30	42.41
231313 D		70.33	30	42.66
231314 D		70.14	30	42.77
231315 D		70.02	30	42.84
231316 D		70.05	30	42.83
231317 D		70.16	30	42.76
231318 D	SB1 6-8	70.64	30	42.47

Detailed Salinity Weights For Loyd Deuel Reported: 12/20/2007

Lab	Sample	Detailed Sal	Detailed Sal	Sal moisture
#	ID	Soil Wt (g)	H2O Vol (ml)	%
231319	DSB1 8-10	70.04	30	42.83
231320	DSB1 10-12	70.26	30	42.70
231321	DSB1 12-14	70.13	30	42.78
231322	DSB1 14-16	70.50	30	42.55
231323	DSB1 16-18	70.47	30	42.57
231324	DSB1 18-20	70.06	30	42.82
231325	DSB2 0-1	70.53	30	42.54
231326	DSB2 1-2	70.25	45	64.06
231327	DSB2 2-3	70.37	45	63.95
231328	DSB2 3-4	70.13	45	64.17
231329	DSB2 4-5	70.20	30	42.74
231330	DSB2 5-6	70.64	45	63.70
231331	DSB2 6-8	70.87	45	63.50
231332	DSB2 8-10	70.98	45	63.40
231333	DSB2 10-12	70.29	30	42.68
231334	DSB2 12-14	70.64	30	42.47
231335	DSB2 14-16	70.53	30	42.54
231336	DSB2 16-18	70.26	30	42.70
231338	DSB2 18-20	70.63	30	42.47



<b>ARCADIS</b>		Laborat	ory Task	Order No	o./P.O. No		CHA	IN-OF-C	USTOD	Y RECORD PA	age <u>2</u>	of
Project Number/Name O	Koo	1547.00	00/				ANALYSI	S / METHO	D / SIZE			
Project Location Oxy et	al Pr	ronghorn	State	e#2						7		
Laboratory									/	/ /		
Project Manager Mik	e Go	ates .			′ /	/	/	′ /				
Sampler(s)/Affiliation	read	lis										
•		Date/ <del>Tim</del> e	Time	, /								
Sample ID/Location	Matrix	Sampled	tab ID							Remarks	i	Total
DS BX(0-1)	5	12/7/07	9:47	2								/
DSB2(2-3')		•	9:30									/
USB-2 (3-41)			7:51									/
D5B-2(4-3')			7:32	I								1
038-2 (3-6')			9:59									1
OSB-2 (6-8')			10:00	l.								1
DSB-2 (8-10')			10104	1								1
058-2 (10-12')			10:05									1
DSB-2 (12-141)			10:09	7								1
PSB-2 (14-16')			10:10	,								1
DSB-2(16-181)			10,13			<u> </u>						/
DSB-2 (18-201)		ļ	10:14									1
55B-6(0-1)			11:14									1
55B-6 (1-2)			11:19									1
55B-6(2-3')			11:20	<u> </u>								/
Sample Matrix L = Liquid	d; S =	Solid, A =	Air								of Bottles/ Containers	15
Relinquished by: Received by:	Done	ung	Organiz Organiz	zation: zation:	Arcadi SA-SI	<u>خ</u>		Date 12 /	10 107	Time 17.00	Seal I Yes N	Intact? No N/A
Relinquished by:  Received by: Mini Ka	Moral	es	Organiz Organiz	zation: zation:	Soil test	ng las		Date 17/	13 107	Time		Intact? Io N/A
Special Instructions/Remarks: Send Billau	ed K	eport	to M	4. ke	Gate	5						
Delivery Method:	In Pers	son 😾	Comm	on Carri	er_ <i>Fed</i>	SPECIFY		□ Lab Co	ourier	□ Other	SPECIFY	AC 05 12/0

<b>ARCADIS</b> GERAGHTY & MILLER	Laboratory Task	Order No./P.O.	No	CHA	IN-OF-C	USTOD	Y RECORD Pag	ge <u>Z</u>	of
Project Number/Name <u>Of 00/5</u>	47.000/			ANALYSIS	/ METHO	O / SIZE			
Project Location Oxyetal Pr	longhorn State	e#2					7		
Laboratory				/ ,	/ ,	/ ,	/ /		
Project Manager Mike Cates	·								
Sampler(s)/Affiliation Arcudis									
,									
Sample ID/Location Matrix	Date/ <del>Time</del> Time Sampled tab ID						Remarks		Total
SSB-32 (0-1) 5	12/7/07 12:24								/
SSB-2 (1-2')	12:25								1
55B-2 (2-3')	12:25								1
55B-2 (3-4')	12:26								1
558-2 (4-5')	12:26								/
558-5 (0-1')	11;42								/
55B-5 (1-2')	11:42								
55B-5(z-3')	11:42								/
558-5(3-4)	11:43								1
55B-5(4-5')	11,43								10
				<u> </u>					
					<u> </u>				
					<u> </u>		Total No o	f Pottlos/	1
ample Matrix: L = Liquid; S = 1	Solid, A = Air						C	ontainers	
Relinquished by: Kalph La Received by: Kar West	Organiz Organiz		inclis is I		ate <u>/2 //</u> ate <u>/2 /</u>		Time 17.00	7	ntact? lo N/A
Relinquished by:	Organiz والم	ation: ation:	iting Lab		ate/ ate <u>/</u>	13/01	Time <u>/ 分のレ</u>	_ Seal II _ Yes N	ntact? lo N/A
pecial Instructions/Remarks.									
		· · · · · · · · · · · · · · · · · · ·							
Delivery Method: 🗆 In Perso	on 🔀 Commo	on Carrier_ <i>}</i>	ed cy SPECIFY	[	☐ Lab Co	urier	□Other	SPECIFY	

AG 05-0597

ARCADIS Labora	ntory Task Order No./P.O. No	CH	IAIN-OF-CUSTO	Y RECORD Pag	je <u>    3     of        </u>			
Project Number/Name OK OG/34 7.	YSIS / METHOD / SIZE							
Project Location Oxyet al Prongho	rn State#Z			7				
Laboratory		/ /						
Project Manager Mike Getes	/ /		/ / /	′ /				
Sampler(s)/Affiliation Arcadis	/ /							
Date/ <del>Time</del> Sample ID/Location Matrix Sampled	Time			Remarks	Total			
558-6(3-41) 5 12/7/03					1			
SSB-6(4-5')	11:22				1			
SSB-7(0-1)	11:30				7			
55/3-7(1-2')	11:31				1			
5SB-7(Z-3')	11:33				//			
558-7(3-4)	11:34							
SSB-7 (4-5')	11:34				/			
55B-8 (0-1)	11:02							
SSB-8(1-Z')	11:05				1			
55.0-8(2-3)	11:07							
SSB-8 (3-47)	11:08							
55B-8(4-5) V	11:09				/			
Sample Matrix. $L = Liquid; S = Solid; A$	= Air			Total No. of Co	F Bottles/ / Z ontainers			
Relinquished by: Relph Leng. Received by: I will	Organization: Arcae Organization:	lis	Date /2//0/07		Seal Intact? Yes No N/A			
Relinquished by:	Organization:		Date//	Time	Seal Intact?			
Received by: Monika Morales	_ Organization分组 ( ) 分分	i, las	_ Date 17 /13 / 6-7	Time	Yes No N/A			
Special Instructions/Remarks:  Send Bill & Report	to Mike Get	-e5						

\_\_ 🗆 Lab Courier

Other\_\_\_\_\_specify

<b>ARCADIS</b>		Lab	orato	ry Task (	Order No	./P.O. No		CHA	IN-OF-C	USTOD	Y RECO	RD Pag	e	<del></del> of	
Project Number/Name <u>O K 00 / 547, 000 /</u>							ANALYSI:	ANALYSIS / METHOD / SIZE							
Project Location Oxy	tal 1	rongh	orn	State	#2			7	7			7			
Laboratory					,				/ ,	/ /					
Project Manager Mike	Gate	5	_				′ /	′ /							
Sampler(s)/Affiliation $A_{1}$															
Sample ID/Location	Matrix	Date/ <del>Ti</del> Sample		Time								Remarks		Tota	
DSB-1(0-1)	5	12/7/	67	10:28										1	
DSB-1 (1-2)	1			0:36										1	
DSB-1(2-3)				10:31										1	
DSB-1 (3-4')				10:33										1	
058-1(4-5.)			1	0;34										1	
OSB-1(5-6)			/	5:40										1	
DSB-16-8)				6:41										1	
DSB-1(8-10')			/	0:46										1	
058-1(10-12')				0:47										1	
DSB-1(12-14')				10:49										1	
25B-1(14-16')				10:50	)									1	
DSB-1 (16-18+)				10:32										/	
DSB-1(18-20)				0:53				_						1	
DSB-Z(1-2')				9:48										/	
DSB-2(Z-3')	V		/ !	9:30										/_	
Sample Matrix: L = Liquid	l; S =	Solid;	A =	Air							٦	otal No. of Co	Bottles/ ntainers	15	
Relinquished by:	sh La	ns		Organiza Organiza		Ances SASI		C	Date 12/	10 107	Time /	7:08	Seal II	ntact?	
Relinquished by: Organization: Organization: Sail testing Las				Lal		Date / / Time Date /2 //3 /67 Time / KOV					ntact? o N/				
Special Instructions/Remarks:	e Re	port	+	s N	lite	Gate	<u>ح</u>								
Delivery Method: □	In Pers	on	⊠(	Commo	n Carri	er <i>Fed</i> c	SPECIFY		☐ Lab Co	ourier	□Oth	er	SPECIFY	AG 05-	

SPECIFY AG 05-12/01

			and the control of the												
<b>ARCADIS</b>		Laboratory Task Order No./P.O. No						_ CHAIN-OF-CUSTODY RECORD Page of							
Project Number/Name OK 06 /547, 000/															
Project Location Oxy et al Pronghorn State#2															
Laboratory				,						/ ,					
Project Manager $\mathcal{M}_{\mathcal{U}}$	te G	ites			/	/	′ /		′ /						
Sampler(s)/Affiliation Arcadis															
Sample (S)// Williadion															
Sample ID/Location	Matrix	Date/ <del>Time</del> Sampled	Time tab 10								Remarks		Total		
55B-3(O+1')	S	12/7/0	7 12:02										)		
SSB-3 (1-21)	}	1	12:03										,		
55/3-3(2-31)			12/03										1		
SSB-3 (3-4')			12:04										/		
SSB3 (4-51)			12:04										1		
55B-1(0-1')			12:16										1		
55 B-1 (1-2')			12:16										l		
55B-1(z-3')			12:17										/		
SSB-1(3-41)			12:17										1		
55B-1(4-5')			12:18										/		
SSB-4(0-1)			11:50										_/		
53B-4(1-21)			11:50										7		
SSB-\$(2-3)			11:51										_/		
558-4(3-41)			11:51										)		
SS 13-4(4-5")	V	V	(1:52										1		
Sample Matrix: L = Liqui	d; S =	= Solid; A	= Air							To	otal No. of Coi	Bottles/ ntainers	15		
Relinquished by: Received by: A logget	kuel	une	Organiza Organiza	ation:	read.	í š	D	ate $\frac{12}{2}$	10,07	Time	7:00	Seal In			
Relinguished by:	A	Long Ki	Organiza	ation:	rendi	4 RL	D	ate/_		Time		Seal In			
Received by: Monitor	Morn	lest	_ Organiza	ation: _ <del>5"</del>	1 Testing	Lab	D	ate / 2/ /	B /	- Time <u>188</u>	0	Yes No			
Special Instructions/Remarks:	Repo	- + +	Mike	Gat	e <										
Send Bill 9	nepe				-										
Delivery Method:	In Per	son [	<b></b> Commo	n Carrie	erFed	SPECIFY ·		☐ Lab Co	ourier	□Othe	er	SPECIFY			

### Bratcher, Mike, EMNRD

From: Bratcher, Mike, EMNRD

Sent: Tuesday, July 01, 2008 11:00 AM

To: 'Gates, Mike'

Cc: Andrew Cloutier; JRC@modrall.com; pth@modrall.com; KPurcell@rodey.com

Subject: RE: Earthen Pit Investigation; Pronghorn State No. 2, Eddy County, NM

Reference: Pronghorn State 002 2-21s-28e Eddy County New Mexico API: 30-015-29931

Mr. Gates,

The recommendations for closure of the Pronghorn State 2 pit are approved as presented. Please notify New Mexico Oil Conservation Division (NMOCD) District 2 Office 24 hours prior to commencement of activities. A closure report will be required to be submitted to the NMOCD District 2 Office upon completion of project.

Please be advised that this approval does not relieve NGX Company, or, any current and/or future operator, of liability should this operation have failed to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, this approval does not relieve the operator of record of responsibility for compliance with any other federal, state, local laws and/or regulations

Sincerely,

Mike Bratcher NMOCD District 2 1301 W. Grand Ave. Artesia, NM 88210 (575) 748-1283 Ext.108

From: Gates, Mike [mailto:Mike.Gates@arcadis-us.com]

Sent: Monday, June 30, 2008 1:01 PM

To: Bratcher, Mike, EMNRD

**Cc:** Andrew Cloutier; JRC@modrall.com; pth@modrall.com; KPurcell@rodey.com **Subject:** Earthen Pit Investigation; Pronghorn State No. 2, Eddy County, NM

Mr. Bratcher:

ARCADIS conducted an investigation of an earthen pit associated with the Pronghorn State No. 2 in Eddy County, New Mexico. Based on the results of the investigation, recommendations for closure of the pit were included in the above-referenced report submitted to your office in February 2008. Based on our telephone conversation today it is our understanding that you have reviewed the report and approve the work recommended for an in-place closure.

In order for the parties to initiate the proposed work to close this pit, please send us confirmation (e-mail reply) of your approval to proceed with the closure recommendations included in the February 2008 report.

Thanks

Michael Gates
ARCADIS
5100 East Skelly Drive, Suite 1000
Tulsa, OK 74135
918.850.1052 (Cell)
918.664.9900 (Office)

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### Bratcher, Mike, EMNRD

RP-U

From:

Guye, Gerry, EMNRD

Sent:

Monday, April 21, 2008 9:31 AM

To:

Bratcher, Mike, EMNRD; Bonham, Sherry, EMNRD

Subject: FW: Oxy Pronghorn State #2: Work Scope Change and Notice for Conducting Field Work

Have you seen the work plan he is talking about? If so, was it approved or what?

### Gerry Guye

Compliance Officer NMOCD - Artesia Office (505)748-1283x105 Mobile (505)626-0843 E-Mail: gerry.guye@state.nm.us

From: Gates, Mike [mailto:Mike.Gates@arcadis-us.com]

Sent: Monday, April 21, 2008 9:20 AM

To: Guye, Gerry, EMNRD

Subject: RE: Oxy Pronghorn State #2: Work Scope Change and Notice for Conducting Field Work

Gerry,

This just approves the work plan. We competed all of the work in the work plan back in December and prepared a closure plan for the pit in a report dated February 2008. I need to know if you guys have reviewed/approved this closure plan for the pit.

Let me know if you need another copy of the investigation report.

Thanks

Mike

Michael Gates

**ARCADIS** 

5100 East Skelly Drive. Suite 1000 Tulsa, OK 74135 918 850 1052 (Cell) 918.664.9900 (Office)

**From:** Guye, Gerry, EMNRD [mailto:gerry.guye@state.nm.us]

**Sent:** Monday, April 21, 2008 10:18 AM

To: Gates, Mike

Subject: RE: Oxy Pronghorn State #2: Work Scope Change and Notice for COnducting Field Work

Mike

I found this in the file. I think this is all you should need to complete this project. If I can be of further service, feel free to contact me.

### Gerry Guye

Compliance Officer NMDCD - Artesia Office (505)748-1283x105 Mobile (505)626-0843

E-Mail: gerry.guye@state.nm.us

**From:** Gates, Mike [mailto:Mike.Gates@arcadis-us.com]

Sent: Monday, November 19, 2007 8:52 AM

To: Guye, Gerry, EMNRD

Cc: 'Andrew Cloutier'; 'kpurcell@rodey.com'; 'jrc@modrall.com'; 'phalajian@modrall.com'; Lloyd Deuel; Talbert,

Jasmin; Lang, Ralph; Perschnick, Kathy

Subject: Oxy Pronghorn State #2: Work Scope Change and Notice for COnducting Field Work

#### Gerry,

ARCADIS is correcting a scope of work item for our investigation of the above-referenced site. The work plan described field analyses for some of the collected soil samples. This is incorrect. All soil samples will be analyzed by the analytical laboratory. In addition, for the two deeper borings planned, the number of soil samples collected may be reduced by compositing for every couple of feet of depth below a depth of five feet and the laboratory analyses may vary from what was described in the work plan, The work plan had described samples every foot

For everyone's notification, ARCADIS is planning to conduct the field work the week of December 3. Feel free to call me for specific times that we will be in the field that week.

Michael Gates
ARCADIS
5100 East Skelly Drive, Suite 1000
Tulsa, OK 74135
918.850.1052 (Cell)
918.664.9900 (Office)

**From:** Guye, Gerry, EMNRD [mailto:gerry.guye@state.nm.us]

Sent: Friday, November 02, 2007 3:17 PM

To: Gates, Mike

Subject: Oxy Pronghorn State #2

#### Mike

The work plan submitted November 1, 2007 for this pit is approved. I would appreciate your forwarding this email to those personnel involved in this project.

Please keep me informed of the status of this project at regular intervals, not to exceed 30 days.

After sampling and testing the lab results must be submitted to OCD for approval before back filling of the pit may begin.

Please be advised that OCD approval of this plan does not relieve the company of liability should their operations have failed to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the company of responsibility for compliance with any other applicable federal, state, local laws

and/or regulations.

### Gerry Guye

Compliance Officer
NMOCD - Artesia
Office (505)748-1283x105
Mobile (505)626-0843
E-Mail: gerry.guye@state.nm.us

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### Bratcher, Mike, EMNRD

From: (

Guye, Gerry, EMNRD

Sent:

Wednesday, February 13, 2008 7:53 AM

To:

Bratcher, Mike, EMNRD

Subject: FW: Oxy Pronghorn State #2

FYI

- 15 Table

### Gerry Guye

Compliance Officer NMOCD - Artesia Office (505)748-1283x105 Mobile (505)626-0843

E-Mail: gerry.guye@state.nm.us

From: Gates, Mike [mailto:Mike.Gates@arcadis-us.com]

Sent: Tuesday, February 12, 2008 3:06 PM

To: Guye, Gerry, EMNRD

Subject: RE: Oxy Pronghorn State #2

Gerry,

FYI, we are working on our investigation report for the Pronghorn State #2 pit investigation. We should have it to you next week.

Let me know if you have any questions.

Thanks Mike

Michael Gates

**ARCADIS** 

5100 East Skelly Drive, Suite 1000 Tulsa, OK 74135 918 850.1052 (Cell) 918.664.9900 (Office)

**From:** Guye, Gerry, EMNRD [mailto:gerry.guye@state.nm.us]

Sent: Tuesday, November 27, 2007 3:25 PM

To: Gates, Mike

**Subject:** RE: Oxy Pronghorn State #2

The work plan is ok. However I will not be available Tuesday to witness.

### Gerry Guye

Compliance Officer NMOCD - Artesia Office (505)748-1283x105 Mobile (505)626-0843 E-Mail: gerry.guye@state.nm.us

From: Gates, Mike [mailto:Mike.Gates@arcadis-us.com]

Sent: Tuesday, November 27, 2007 1:44 PM

To: Guye, Gerry, EMNRD

Subject: RE: Oxy Pronghorn State #2

Gerry,

A couple of things Did you see our minor changes to the work plan? Are you OK with the changes?

Also, I wanted to know if you were planning on being there when we start our work next Tuesday morning I need someone to lead our field people to the site. If you might be available to do that, let me know.

Thanks Mike

Michael Gates

ARCADIS
5100 East Skelly Drive, Suite 1000
Tulsa, OK 74135
918.850.1052 (Cell)
918.664.9900 (Office)

**From:** Guye, Gerry, EMNRD [mailto:gerry.guye@state.nm.us]

Sent: Friday, November 02, 2007 3:17 PM

To: Gates, Mike

Subject: Oxy Pronghorn State #2

#### Mike

The work plan submitted November 1, 2007 for this pit is approved. I would appreciate your forwarding this email to those personnel involved in this project.

Please keep me informed of the status of this project at regular intervals, not to exceed 30 days.

After sampling and testing the lab results must be submitted to OCD for approval before back filling of the pit may begin.

Please be advised that OCD approval of this plan does not relieve the company of liability should their operations have failed to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the company of responsibility for compliance with any other applicable federal, state, local laws and/or regulations.

Gerry Guye

Compliance Officer NMOCD - Artesia Office (505)748-1283x105 Mobile (505)626-0843

E-Mail: gerry.guye@state.nm.us

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ARCADIS U.S., Inc 5100 East Skelly Drive Suite 1000 Tulsa Oklahoma 74135 Tel 918 664 9900 Fax 918 664 9925 www.arcadis-us.com

**Environmental Services** 

Date

November 1, 2007

Contact

Michael M. Gates

Phone

918-664-9900

Email

Mike.Gates@arcadisus.com

Mr. Gerry Guye
Deputy Field Inspector
New Mexico Oil Conservation Division
1301 W Grand Avenue
Artesia, New Mexico 88210

30-015-29931

Pronghorn State #2, Section 2, Township 21 South, Range 28 East, N.M.P M., Eddy County, New Mexico.

Dear Mr. Guye:

The following scope of work has been prepared to investigate the soil quality within and underlying an earthen pit associated with the Pronghorn State #2 site located in Section 2, Township 21 South, Range 28 East, N.M.P.M., Eddy County, New Mexico The scope of work is being submitted to the New Mexico Oil Conservation Division (OCD) for approval prior to implementation. The scope is consistent with the discussions held between the interested parties at the meeting conducted at the site on August 23, 2007.

The pit remains open even though a well was not completed at this location. The objective of the investigation is to sample soils within and underlying the pit to determine the presence or absence of impacts from brine and/or petroleum hydrocarbons. The results of the investigation will allow a determination to be made as to whether remediation and/or additional investigation activities associated with closure of the pit are necessary.

#### **SCOPE OF WORK**

The scope of work to investigate soil quality within and underlying the earthen pit will focus on the upper twenty (20) feet of the soil profile assuming that groundwater will not be encountered within this interval. If groundwater is encountered within the upper 20 feet, then the depth of investigation for the soil profile will be adjusted accordingly.

Two primary investigative tools will be utilized for the investigation. Electromagnetic conductivity surveys will first be conducted to provide information on the vertical and

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Mr Gerry Guye November 1, 2007

lateral extent, if any, of brine related impacts. This will be immediately followed by confirmation soil sampling to determine the presence or absence of impacts from brine or petroleum hydrocarbons. The following scope of work is proposed:

- An EM-31 and EM-38 electromagnetic conductivity survey will be conducted over a grid area covering approximately 200 feet by 200 feet and overlying and extending beyond the boundaries of the earthen pit. The objective of these surveys will be to determine background conductivity response and identify any conductivity anomalies within the surveyed area to target for confirmation soil sampling.
- Soil borings will be conducted using direct-push technology. Soil borings will
  be advanced to approximately 20 feet in depth at two locations; one in the
  center of the anomalous high conductivity area and one in the area of lowest
  conductivity based on the EM-31 survey results. In addition, eight (8)
  shallow soil borings will be advanced to a depth of approximately five (5) feet
  within the surveyed area to confirm the results obtained from the EM-38
  survey.
- Discrete soil samples will be collected from each soil boring at one (1) foot
  intervals, as discussed below. Collected soil samples will be submitted to an
  analytical laboratory acceptable to the State of New Mexico. Soil sample
  collection and the proposed analytical program are presented below
- The results of the field investigation work will be presented in a report to the OCD that will include conclusions and recommendations for additional investigation and/or remediation activities, if needed. At a minimum the report will include a proposed work scope that will be necessary to provide for pit closure and surface restoration.

### **Electromagnetic Conductivity Survey**

Electromagnetic (EM) conductivity surveys of the area encompassing the earthen pit will be utilized to delineate areas potentially impacted by oil field brine. The particularly high electrical conductivity of oilfield production water (brine) makes the detection of brine related soil impacts by EM conductivity methods an especially reliable geophysical application. Electromagnetic conductivity instruments consist of

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Mr. Gerry Guye November 1, 2007

a transmitter and receiver coil, and a power source that can be handled by one or two persons. During the operation of the instrument, the transmitter coil is energized by an alternating current and radiates an electromagnetic field into the earth. This primary field induces electrical currents (called eddy currents) in the earth below the instrument. The magnitude of these currents is proportional to the conductivity of the ground. These eddy currents, in turn, generate a secondary electromagnetic field that is detected by the receiver coil on the instrument. The receiver coil also detects the primary field and uses these two measurements to calculate the conductivity of the ground. This reading represents a bulk measurement of the conductivity of a volume of ground beneath the instrument down to its effective depth of penetration.

For this site, EM-31 and EM-38 surveys are proposed. The EM-38 instrument has an effective investigation depth of 5 feet and the EM-31 instrument has an effective depth of 18 feet. The effective depth difference will allow for some vertical discrimination of conductivity within the soil profile throughout the surveyed area. Additional vertical discrimination will be obtained by running the EM surveys in both the vertical and horizontal dipole mode. A survey grid of approximately 200 feet by 200 feet should be adequate to overlap and extend beyond the boundaries of the earthen pit to allow a comparison of background soil conditions with those underlying the pit. The survey will be completed by walking the area along survey lines that are 10 feet apart. Conductivity readings are recorded continuously as each survey line is traversed.

#### **Soil Sampling Program**

Approximately 10 soil borings are planned for this investigation; two deep borings (20 feet) and eight shallow borings (5 feet). A comparison of the collected data should allow for estimating the amount of produced water discharged to the pit and the potential threat to any underlying groundwater.

The borings will be installed using direct-push technology and continuous soil cores will be collected as the borings are advanced. The two deeper borings will be installed in the area of highest and lowest conductivity based on the EM-31 survey. For these borings, soil samples will be collected at one (1) foot intervals throughout the depth of the boring. Each soil sample will be analyzed for percent moisture, electrical conductivity, soluble chloride and sodium (on a 1:1 soil ' water extract), and exchangeable sodium. A minimum of two (2) soil samples (collected from 0-5 feet and 5-10 feet) from each of the deeper borings will be analyzed for Total Petroleum Hydrocarbon (TPH) using Texas Method 1005. Additional TPH analyses will be

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Mr. Gerry Guye November 1, 2007

included if warranted based on visual, olfactory, and/or photoionization screening conducted at the time of sampling.

Eight (8) shallow soil borings will be advanced to a depth of approximately five (5) feet within the surveyed area to confirm the results obtained from the EM-38 survey. For these borings, soil samples will be collected at one (1) foot intervals throughout the depth of the boring. Each soil sample will be tested in the field for electrical conductivity (saturated paste) to ground truth the EM-38 results. For the two borings located in the area of highest conductivity, based on the EM-38 survey, a minimum of two soil samples per boring will be collected and analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), TPH, and chloride.

#### **SCHEDULE**

The work described in this work plan can be scheduled within 45 days of the later of: (a) receipt of approval from OCD; or (b) agreement by the three parties to the litigation (NGX, Great Basin, and OXY) on a means for paying for the work. Concerning the latter issue, I have prepared an estimate of the cost for implementing this work plan and understand that the attorneys and parties are discussing how to proceed if the OCD approves this work plan. The proposed field work will require approximately two or three days to complete. A report covering the results of the investigation will be submitted within 60 days of completion of the field work

Sincerely,

ARCADIS U.S., Inc.

Michael M. Gates Project Advisor

Copies

Charles K. (Kip) Purcell, Esq.

John R. Cooney, Esq.

Paul T. Halajian, Esq.